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ABSTRACT

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REPORT NO. 162

November, 1973

RAINY DAYS AND MONDAYS: AN ANALYSIS OF FACTORS RELATED TO
ABSENCE FROM SCHOOL

Nancy L. Karweit

The
Johns Hopkins
University

U.S. DEPARTMENT OF HEALTH &
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Introductory Statement

The Center for Social Organization of Schools has two primary objectives: to develop a scientific knowledge of how schools affect their students, and to use this knowledge to develop better school practices and organization.

The Center works through three programs to achieve its objectives. The Schools and Maturity program is studying the effects of school, family, and peer group experiences on the development of attitudes consistent with psychosocial maturity. The objectives are to formulate, assess, and research important educational goals other than traditional academic achievement. The School Organization program is currently concerned with authority-control structures, task structures, reward systems, and peer group processes in schools. The Careers and Curricula program bases its work upon a theory of career development. It has developed a self-administered vocational guidance device and a self-directed career program to promote vocational development and to foster satisfying curricular decisions for high school, college, and adult populations.

This report, prepared by the School Organization program, examines factors that influence student absenteeism from school.

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Abstract

This paper presents an analysis of factors related to student absenteeism. Absenteeism, long utilized in industrial and business settings as an indicator of employee adjustment and satisfaction, is suggested as a similar indicator in studying the school as an organization. Characteristics of absence as a variable are explored. The influences of various factors are studied--daily events such as bad weather and school activities, and long term influences such as a student's attitude toward school and involvement in school. The paper concludes with some suggestions for addressing the absenteeism problem.

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Introduction

On any current school day, many urban schools report more students absent than present in school (New York Times, Feb. 2, 1970, P. 1; Baltimore City Public Schools Attendance Summaries, 1972). This fact of contemporary school life is inconsistent for a nation that has historically placed a high value on educational attainment. Excessive absenteeism keeps the individual student from taking full advantage of his educational opportunities. It also indirectly disrupts the education of his regularly attending classmates as teachers try to reteach the missed subject material. School systems as a whole lose economically by this absenteeism due to the fact that most states disburse funds on the basis of average daily attendance. Most disruptive to the society as a whole which values educational attainment is the association of this habit of absenteeism and early withdrawal from school. Over forty percent of eligible students currently do not complete their high school education (Lichter, et al., P. 4).

To some extent, excessive student absenteeism reflects the failure of the school to win the student's attention in the face of strong competition from outside events. It also reflects changing student attitudes toward authority and the school itself. Many students today simply do not regard unexcused absences as serious.

The situation is complicated further by the school's lack of acceptable responses to excessive absenteeism. Schools lack the personnel or resources to try to remedy the situation. Expulsion from school is not desired, because the objective is to get the student back into school. In extreme cases, the parents may be taken to court for noncompliance with the compulsory attendance law.

The disruptive nature of excessive absenteeism is better understood than what can be done to change it. Faced with increasing absentee problems and tightened budgets, school systems are usually not able to address these problems systematically. Attendance improvement schemes have been implemented (Pontiac, Michigan Public Schools; Norwich, Connecticut), and task groups have been organized to study the problem (Baltimore City Task Force Report, 1972), but our minimal knowledge about factors related to absenteeism hinders these efforts. The purpose of the current study is to examine in detail some of the factors that influence absenteeism. Specifically, this report will discuss: 1) methods of reporting and accuracy of reporting absence, 2) properties of attendance data, 3) a general framework for studying factors related to school absence, 4) global, school and student characteristics influencing school absence, and 5) specific ideas for reducing absenteeism.

Theoretical Placement of Absenteeism Study

This study of student absenteeism is part of a larger study of how organizational features of schools influence academic and non-academic outcomes of their students. Major organizational characteristics (authority, control, task structures, reward structure) may directly (or indirectly, through the informal social process) influence student outcomes. Specific outcomes that may be influenced are adjustment to and satisfaction with school as indicated by attendance and tardiness data and discipline records.

Consequently, part of this absenteeism study is aimed at describing more fully the dependent variable, school absence and lateness. Questions concerning methods of reporting, accuracy of reporting and a discussion of the general characteristics of attendance data can therefore give us important knowledge about one of the dependent variables under investigation.

Besides providing a better understanding of some major non-academic outcomes of school (adjustment and satisfaction), daily absence and tardiness data can supply evidence about which offerings of the school are relatively more attractive to its students. By examining the association between daily attendance and types of school activities in one school setting, we can gain insight into which areas of school life are rewarding enough to draw students into school. This analysis of differential absence hopes to provide evidence about latent valued rewards which the school might mobilize to its advantage.

In addition, this absenteeism study will implement a variety of responses to absenteeism and assess their effectiveness for different kinds of students. This aspect of the project will aim to increase the responsiveness of the school to a specific behavior (absence) of its members by attempting to tailor the response to some relevant characteristics of the students. To accomplish these objectives, an attendance monitoring system will be used to accurately collect and summarize attendance data and to enable the school to tie the desired response to a specific behavior.

Review of Related Research

There is a lack of current research devoted specifically to understanding factors related to student absenteeism. Some attention has recently been given to the development of more efficient procedures (usually computerized) for recording absence and lateness. These efforts are based on the assumption that more timely and accurate attendance information utilized

by the appropriate people will reduce absenteeism and lateness. However, little has been done to carefully study the impact of the installation of these new systems over a period of time or to systematically analyze what factors are associated with the absenteeism.

Several earlier studies have looked at the effect of school attendance on school performance and other areas of school life. Research related to attendance which was carried out in the period 1870 - 1930 was primarily aimed at assessing the influence of the compulsory school attendance laws enacted during that period.

Carl Ziegler's School Attendance As a Factor in School Progress (1928) is perhaps the most relevant research of this period. His study examined the relation of attendance of 307 seventh graders to such factors as school marks, school progress, ability, environment, economic status of the home, and distance of home from school. Ziegler's study found a positive correlation (.34) between school marks and attendance. He also showed that students who were absent for longer periods of time have on the average poorer grades. The effect of length of absence was verified by counting the frequency of one day, two day, three day and so on absences and comparing the proportion having average marks as A's, B's, C's, D's or F's.

Ziegler also showed that distance of school from home was not a significant factor in absenteeism. Another interesting finding was the influence of the personality of the homeroom teacher on attendance. He found the attendance of students in homerooms where the teachers were interested and concerned with their students to be significantly better than homerooms where the teachers were not.

Ziegler's findings of the importance of school attendance to school marks is contested in the summary of Heck in 1950 which reported "while

research is not conclusive, what there is tends to refute the too common assumption that absence results in a harmful effect upon scholarship as expressed by marks."

Another article by Finch and Nemzek (1940) summarized 21 studies carried out during 1909 - 1936 relating attendance and achievement in secondary schools. Due to inconsistencies in measures and methods, neatly categorizing these results is difficult.¹ In general, they found evidence that attendance and achievement were positively related with partial correlations (holding IQ constant) in the range of .10 to .34. Interestingly, two of the studies found significant correlations between attendance and achievement for girls, but not for boys in their samples.

More recently, the educational research dealing with drop-out causes and prevention has focused circumstantially on truancy as a possible predictor of potential drop-outs. For example, the Maryland State Department of Education's study of drop-outs showed that 72.7 percent of the drop-outs had irregular attendance patterns during the year they withdrew from school (Table 17, Pupil Dropout Study, 1960-1). Lichter, et al., in the Drop-Outs (1962) also reported school attendance problems as one of the chief factors related to dropping out of school. Care should be exercised in understanding how the drop-out rate and by extrapolating backwards, the attendance problems, are related to larger forces such as unemployment and general economic conditions of the society.

¹ J. M. Stephens, in The Process of Schooling, reports that Finch and Nemzek found correlations between .10 and .20 with an occasional one reaching .30 (controlling for intelligence). Stephens concludes that their summary provides additional evidence for the unimportance of school attendance on achievement. Actually, their summary stressed that it was unsafe to make such conclusions due to the confusion of methods and measures used.

Stephens, in his two sentence summary of their article, does not make their point clear.

In a comparative study of drop-out rates in 131 cities, Dentler and Warshauer (1966) point out that because the drop-out rate is usually based on a fifth grade cohort examined eight years later, the substantial number of 19 - 24 year olds completing their education are not included. Nor is the fact stressed that the likelihood of completing high school has dramatically increased since 1900. Abbott Ferris (1969) has shown that the probability of retention in school from grade 11 to 12 has increased from .75 in 1910 to .92 in 1960. This probability has shown marked decreases during war-time and increases during periods of increased unemployment. Where jobs are scarce one of the inducements to withdraw from school is less potent and one could expect a higher retention rate. Staying in school may be the only alternative. In this type of situation, it would seem reasonable that student disinterest and dissatisfaction would be high. Much of our current absenteeism problem is probably derived from our success in retaining students who would rather be employed or be homemakers.

Probably the most relevant research is found not in education, but in studies of absenteeism in industry. Studies abound which have used absenteeism and turnover as indices of adjustment to the job and which have associated structural and managerial features of the organization to these indices.

Several reviews summarizing the known relationships between organizational factors and absenteeism/turnover are available [Vroom, (1964); Brayfield and Crockett (1955); Herzberg, Mausner, Peterson & Capwell (1957); and Porter and Steers (1973)]. Porter and Steers' review covers studies carried out during the past 10 - 12 years. They organized their review into sections relating specific internal organizational factors to withdrawal (absenteeism/turnover).

Under organization wide factors, Porter & Steers included pay and promotion practices and organization size. Pay and promotion practices were found to be associated negatively with termination and absenteeism in 10 out of 12 studies reviewed. The cause for this association is hypothesized to be the perceived inequity of the reward, not the actual pay or promotion level. Workers expect to be fairly and equitably rewarded for their time and effort, are dissatisfied if they view the treatment as unfair, and respond by withdrawal from the job.

Absenteeism, but not turnover, was found to be significantly related to increased over-all organization size in one study reviewed by Porter & Steers.

This review next considered how immediate work environment factors were associated with job withdrawal. Such factors as satisfaction with supervisory relations, work unit size and peer group interactions were examined here. On the whole, turnover was found to be negatively related to satisfaction with supervisor and with relations with peers, and absenteeism was shown to be associated positively with work unit size. The relationship of work unit size and absenteeism has been examined frequently over a wide period of time and working conditions, and has consistently shown this relationship.

Task repetitiveness, job autonomy and responsibility, and the nature of the job itself have also been studied and found to be associated with job withdrawal. Termination and dissatisfaction with job content are positively related; both turnover and absenteeism are positively linked with task repetitiveness and with a lack of job autonomy and responsibility.

Besides these organizational factors, personal characteristics of the worker have been studied and their relationship to withdrawal analyzed.

Age and termination are inversely related whereas age and absenteeism have been shown to be directly related. A congruence between vocational interests and job realities was also seen as important. Persons who had extreme personality traits (e.g., independence, aggression, self-confidence, career expectations) were also more likely to terminate than those possessing such traits in a moderate degree. Finally, the effect of family size and responsibility was shown to be positively related to turnover and absenteeism for women, but not consistently so for men.

Porter and Steers have organized their review around the notion of "met expectations" and the manner in which this influences withdrawal. As they explain, "the concept of met expectations may be viewed as the discrepancy between what a person encounters on this job in the way of positive and negative experiences and what he expected to encounter." The more an individual's expectations are met, the more satisfied he will be and the less likely to withdraw from the work situation. Recent evidence as well as earlier studies support the hypothesis that job satisfaction and withdrawal are inversely related. Of the 15 studies reviewed for their article, 14 showed significant negative relationships between overall satisfaction and turnover.

Many of these findings may apply to students and other members of the school organization, even though essential differences exist between schools and businesses as organizations. First, schools (public ones at least) do not select their students. The school's student population is defined to a large extent by its physical location. Nor can the school system fire a student, because school is mandated until age 16. In fact, the sanctions the school has available to exercise in comparison to other organizations are very limited indeed.

Secondly, although the system of rewards and their distribution are different in a school as compared to other organizations, some important similarities emerge. A worker is paid for his labors, the payment schedule mutually decided upon at the time of hiring. The reward for a student's efforts consists of grades, recognition and the opportunity for advancement later on. The perceived equity of attainment of the reward is equally important in both settings. Students who think they have no chance of getting higher than a "C" grade as well as workers who think they are being discriminated against become dissatisfied with the system that treats them unfairly. Therefore, despite the differences in particulars, the vast literature relating job satisfaction to absenteeism in industry suggests that we may find similar relationships in student absenteeism studies.

Pilot Study of Absenteeism/Lateness at a Junior High School

During the spring of 1971 we began developing an attendance monitoring system to be used by a local junior high school in the fall. The aim of the attendance monitoring system was threefold: 1) to conveniently capture and summarize attendance information, 2) to alert counselors and staff early in the school year to potential attendance problems, and 3) to provide attendance information for evaluating some attempts at improving students' attendance. The junior high school was brand new in 1971, so no previous method of attendance accounting had been used in the school. Given the uncertainties of a new school and a newly developed system, we decided to begin by doing attendance accounting for the seventh grade only.

When the school opened in the fall, its net enrollment was about 2750 students, 874 of which were seventh graders. The daily absentee rate varied between twelve and twenty percent.

The attendance monitoring system. The monitor system provided, on a daily basis, an alphabetized listing giving the names of absent students and the cumulative number of times absent and tardy for the quarter. The daily printing of these absentee lists was made possible by the location at the school of an IBM 1050 remote station with a typewriter keyboard and card reader. This station was linked via phone lines to the Johns Hopkins Center's 1401 computer. At the computer center, the school's attendance records were stored on a disk pack from which any student's record could be easily retrieved.

Each morning, cards containing the name and identification code for each absent student were read by the card reader (IBM 1056) at the school and transmitted by phone line to the 1401 computer. The disk record for each absent student was updated and the alphabetized listing was transmitted to the school where it was printed on ditto masters on the typewriter.

These lists were then run off and distributed to the teachers. Later in the day, the names of tardy students were transmitted in a similar manner. The cumulative record for those students who had originally been marked absent, but who actually were tardy, was changed accordingly. An alphabetized tardy list similar to the absence list was then printed.

Besides providing the necessary daily absentee/tardy lists and cumulative attendance data, the attendance monitor system maintained a daily attendance vector for each student. This attendance vector was designed to indicate whether a student was absent, late or present for each of 180 school days.

Several modifications were made to the original system and once these were satisfactorily checked out, we began attendance accounting for the entire school (January, 1972). The accounting system provided the daily

absence and lateness list for the entire school for the remainder of the school year.

Attempting to improve attendance. One specific attendance improvement approach that had been tried in other school systems was to increase the parents' awareness about the attendance behavior of their children. It was hoped that greater parent-school contact would cause the parents to work with their children in an attempt to get them to attend school regularly and on time.

School systems that have tried this increased information to parents approach have usually been non-specific about evaluating its effectiveness. For example, statements are made that mailings, phone calls or other types of contact improved attendance, but no indication is given of how the improvement was measured or for how long the improvement was effective.¹ Nor is any indication given about what type of student is more likely to be affected by this increased contact with his parents about attendance.

To answer some of these questions, we decided to mail letters to parents of students who had above average absence and/or lateness during the fifteen school days of April, 1972. (School was in recess for spring vacation for part of April.) Our original intent was to search the daily attendance vector stored on the disk for students fitting this criterion. Two sets of circumstances intervened: 1) program (operator) malfunction so that two days' attendance data were destroyed, and 2) discrepancies between the computer daily vector and the teachers' roll books. The first event (operator error) could have easily been prevented by more careful program design; the second circumstance was due to human mistakes and care-

¹ Norwich, Connecticut school system did show by graphs the drop in lateness and absence after the new system was installed.

lessness and, as will be discussed later, is less amenable to correction. At any rate, we discarded our intention of using the disk record for the mailing and key-punched the attendance information from the individual teachers' roll books. This task was time consuming because the roll books were difficult to read and accuracy was essential.

The below-average attenders were identified as those who were absent 3 days or more and/or late 5 days or more during this fifteen-day period. In May, 1972 we mailed letters to the parents of 796 students satisfying these conditions. Each letter contained the attendance record of the student for the fifteen school days in April, 1972. Figure 1 is a sample letter.

To determine if the mailing was effective in increasing attendance, we carried out two separate regressions for the normal and the problem groups to predict their rate for four days after the mailing on the basis of their before-mailing averages. This analysis, summarized in Table 1, shows that the problem group did not change significantly. The normal group, which had not received letters, did show lower than expected absenteeism on three of the four days following the mailing. Further examination disclosed that a school fair was held during this week. The significant improvement in the normal students' attendance is probably due principally to their involvement in the school fair. Attendance, as this example points out, can be used as an indicator of the extent to which students find school interesting and rewarding. The fact that the problem attenders did not change their attendance behavior in the face of both positive inducements (the school fair) and negative treatments (mailings) suggests how resistant habits of absence and lateness may be.

Implications of the Pilot Study. The pilot study pointed out that
1) collection of a richer data base to describe external, within school and

JUNIOR HIGH SCHOOL
BALTIMORE, MARYLAND

MAY, 1972

DEAR PARENT OF

SHOWN BELOW, FOR YOUR INFORMATION, IS THE ATTENDANCE PATTERN FOR YOUR CHILD FOR THE MONTH OF APRIL. THERE WERE 15 SCHOOL DAYS IN APRIL AND THE ATTENDANCE IS INDICATED BY THE FOLLOWING CODE--

A - ABSENT
L - LATE
• - PRESENT

A P R I L					A P R I L					A P R I L				
10	11	12	13	14	17	18	19	20	21	24	25	26	27	28
A	A	A	A	L	A	A	A	A	A	A	•	A	A	•

RESPONSIBILITY FOR GOOD ATTENDANCE HABITS IS, OF COURSE, PART OF EACH STUDENT'S TOTAL RESPONSIBILITY TO THE SCHOOL AND HIS HOME. WE HOPE THAT THE INFORMATION ABOVE WILL HELP YOU EVALUATE THIS ASPECT OF YOUR CHILD'S GROWTH.

SINCERELY,

PRINCIPAL

Fig. 1. - Sample Informational Letter Sent to Parents

TABLE 1

Predicted/Actual Absentee Rates for Problem and Normal Groups:
Raw Data

GROUP: PROBLEM ATTENDERS

<u>DAY NUMBER (AFTER MAILING)</u>	<u>OBSERVED PCTG ABSENT</u>	<u>PREDICTED PCTG ABSENT</u>	<u>RANGE-2 STANDARD ERRORS</u>
1	27.3	32.4	21.5 - 43.2
2	27.3	32.5	21.7 - 43.3
3	26.8	32.5	21.7 - 43.3
4	32.4	32.6	21.8 - 43.4

GROUP: NORMAL ATTENDERS

<u>DAY NUMBER (AFTER MAILING)</u>	<u>OBSERVED PCTG ABSENT</u>	<u>PREDICTED PCTG ABSENT</u>	<u>RANGE-2 STANDARD ERRORS</u>
1	7.3	12.3	06.9 - 17.7
2	8.2*	14.5	09.1 - 19.9
3	7.7*	16.7	11.3 - 22.1
4	12.2*	18.9	13.5 - 24.3

* - lower than predicted percentage absent.

individual characteristics related to attendance was needed, 2) the current computer hardware (1050 - 1026 - 1401) was inadequate, 3) the nature and practices of school record keeping are somewhat incompatible with utilizing computer systems, and 4) assessment of attendance improvement schemes must be more carefully executed.

The junior high school attendance data illustrate that school absence fluctuates from day-to-day, probably varying with weather conditions, incidence of flu outbreaks, with special events in the school and in the classroom. Of course, an individual student's likelihood of absence is also influenced by many individual characteristics -- his attitude toward school, his success and involvement in school, his relationship with teachers and fellow students, and personal health. Without better understanding the factors influencing the dependent variable, we cannot address ourselves to the more difficult task of changing it.

The pilot study also pointed out the inadequacies of the equipment we were using (IBM 1401 - 1026-1050-1056). On some days it took up to an hour and a half to transmit the absence list to the school. This long run time was due primarily to the slowness of the typewriter and card reader (14.8 characters per second). Since our 1401 could not conveniently multi-process, this meant that no other jobs could be run at the Center during this time. Also, we experienced a higher than expected amount of line or equipment malfunction, making the timing even worse. Attempts to install other types of equipment at the school were not successful because most available devices were not compatible with the 1401/1026 and could be made so only with costly engineering changes.

The pilot study also pointed out some characteristics of school operation and organization that were not fully understood when the initial

system was designed. Every day many students were either added to the roll, dropped from the roll or changed to another homeroom. The large number of changes was partially due to the newness of this particular school, but one can realistically expect a similar situation in most urban schools. Therefore, an adequate procedure for daily maintenance of the computer enrollment file is necessary. Experience with the pilot study indicates that the most desirable file maintenance procedure would permit the school to make changes daily, and interactively with the data file, so input errors could be detected and corrected immediately by personnel at the school.

One example, from another school, illustrates how the decentralized and informal nature that characterizes much of a school's operation can affect the usefulness of a system dependent upon consistency of input. There was a prescribed method for handling absences and lateness, but some teachers followed the procedure to the letter and others used their own interpretation. Officially, if a student was not in his homeroom at the beginning of the homeroom period, he was supposed to obtain a late slip from the central office and then proceed to his homeroom or first period class. The attendance monitoring system then recorded lateness from these late slips. A comparison of the computer attendance data and the homeroom teachers' roll books revealed many discrepancies due to the manner in which some homeroom teachers recorded lateness. Several teachers would allow late students to come into their homeroom without a late pass and, although they would mark these students late in their roll books, the students were not marked late in the central office because they did not obtain a late pass. From the individual teacher's standpoint, this deviation from the standard procedure did not seem important. Failure to understand the importance of following procedures carefully and accurately, even when given detailed written instructions, seems to characterize school record keeping.

Compounding this trait is the fact that many records are generated and maintained by the individual teachers so that any system must take into account the personal idiosyncracies of fifty or more individuals. Experience with automating other procedures (grading, scheduling) indicates that despite orientation meetings, written instructions, and ~~much~~ effort, there will always be a large number of errors in recording data.¹ Consequently, any system must be flexible and robust enough to survive the onslaught of bad data put into it.

Finally, the pilot study pointed out that any evaluation of attendance improvement schemes must be executed in a more controlled environment. Data on school events and weather which obviously interact with attendance should be kept. A random selection of control and experimental groups on the basis of absence data along with several treatments should be tried to assess which treatment works for which type of student. Most importantly, logs should be kept of phone calls and parental visits to discuss attendance problems. Unfortunately, these data were not carefully enough maintained during the pilot study to be useful. For example, approximately fifty parents called the school after the mailing with either inquiries about the content of the letter or to say they thought the mailing was a good idea. Although we had asked the school to record this information, our failure to supply a specific form and specific instructions meant that much of the valuable data were lost in the shuffle.

Given the inadequacies of our hardware for performing the attendance accounting and the fact that this junior high planned to operate two shifts

¹ The pervasiveness of this problem suggests that teachers feel that record keeping is not an important part of their job (i.e., not teaching), is resented, and is therefore done poorly.

in the 1972 - 1973 school year, we decided the computer time required to run the system would be beyond what we could manage. Another site, therefore, was selected to conduct the current absenteeism study.

Current Absenteeism/Lateness Study Of a Senior High School.

The school selected for the current study had a small, all-girl enrollment of about 1100 students, was physically located within a half-mile of our Center, and had an IBM 1130 computer. The availability of this computer at the school was particularly attractive because many of our previous technical problems had centered around transmission problems and the need to maintain records at a physically distant place (our Center) from where they originated (the school). The smaller enrollment meant that the file maintenance problems would also be smaller. Although initiating a new system in a school which is used to doing things another way requires a lot of patience and cooperation of all parties, it is not as formidable a task as designing a system for a new school. We knew beforehand fairly accurately what the average absence and lateness would be; we also knew how the teachers wanted the report formatted.

The Attendance Monitoring System. We wrote and tested the computer programs during November-January, 1972 - 1973. At the same time, the school enrollment was keypunched by students in the keypunch classes as part of their regular classwork. An orientation meeting with the faculty was held in mid-January to explain the system and to distribute materials to the home-room teachers.

Trial runs were made during the latter part of January, and the system was pronounced ready for operation at the beginning of the Spring semester (January 30). Six students in the data processing class were taught the ins-and-outs of the system and after a period of two weeks took complete

charge, on a rotating basis, of its daily operation. The attendance monitoring system provided the daily absence and late list from January 30 - May 18, 1973. A detailed description of the monitoring system is given in Appendix A.

Several other activities were carried out in conjunction with running the attendance monitoring system. A daily weather log was maintained that indicated the general climatic conditions during school travel hours. An activity log which listed school wide assemblies and events as well as individual club meetings was kept up-to-date. Students were given a short questionnaire to determine their attitudes toward school attendance and to obtain information on how they traveled to school, how long it took them to travel to school, and whether this was the high school closest to their home. Teachers and staff members were also given a questionnaire to assess their attitudes towards school attendance and the new monitoring system. Information regarding grades, previous attendance problems, conduct grades, age, and curriculum enrolled in, were recorded for each student for both the fall and spring semesters. Finally, interviews with about fifty students were conducted to gain a more personal insight into reasons for absence from school.

Having described the need for a detailed study of student absenteeism and elaborated the results of one pilot study and the arrangements of another, let us turn to discussing specific topics related to absenteeism.

Methods and Accuracy of Reporting Absence and Lateness

Methods

Absence and lateness are conventionally reported for an individual student as simply the days absent or late during the school year. The absentee rate for an entire school is usually given as a percentage calculated on the basis of whole days missed by those students enrolled during the reporting period. This school wide percentage properly weights students not enrolled for the entire reporting period, whereas the individual attendance records of these students, by stating only the number of days absent, can be very misleading. This point is perhaps obvious, but not remembered when schools use attendance data for reference purposes.

An important consideration to be kept in mind in this study is that absence from school, which we are treating as a unitary variable, comes about from a multitude of causes. Because the reason for absence is inconsistently reported,¹ it is impossible to determine how much absence is

¹ Upon returning to school, the student is required to bring an excuse for the absence. The absence is then indicated as an "excused" absence. In practice, very few excuses are brought in; the authenticity of the actual ones is questionable. In addition, recording the absence as "excused" is somewhat erratically carried out. Consequently, it is not possible to distinguish between excused and unexcused absences.

caused by sickness, how much by family responsibilities and so forth. Researchers in industrial absenteeism face the same problem and in some cases have resorted to classifying one-day absences as "attitudinal" absences; three-day or longer absences as "medical" absences. They often use frequency of absence (number of episodes of absence disregarding length) as their absenteeism measure instead of total days absent. Frequency of absence minimizes the influence of long absences and is claimed to be more reliable over time.¹

Accuracy

Examining current attendance reporting procedures reveals that obtaining accurate attendance data is more complicated than it first appears. Inaccuracies come about because 1) there are many difficulties in maintaining attendance data, and 2) people have a particular interest in biasing the information. Because resources (teachers, aides, etc.) are allocated on the basis of actual net roll, schools may inflate their live net roll by leaving on pupils who are no longer enrolled. These "phantom students" then appear as absent, thus producing higher absentee rates. A second source of inaccuracies comes about because of the method of maintaining the attendance data. For example, it was reported that in Baltimore City over one-third of the junior high pupils were absent forty or more days of the 180 school days in 1971. Without minimizing the serious attendance problem in junior high schools, careful scrutiny should be given to the method of arriving at this figure. As an example, consider the attendance behavior of a student who will not continue in school past his sixteenth birthday, when school attendance is not compulsory. Frequently, this type

¹ Huse and Taylor (1972) reported the correlation for total days absent over two time periods to be .23 whereas for frequency of absence the correlation was .61.

of student will come to school very erratically, if at all. He has, in fact, unofficially withdrawn from school but, until age sixteen, the school correctly marks him absent each day. The exact day when he is officially taken off roll may be his sixteenth birthday or it may be much later. The promptness of purging withdrawn students varies a great deal from school-to-school. Consequently, some students have, in fact, withdrawn from school, but due to the method of reporting will erroneously turn up as one of the students absent more than forty days.

Besides the inaccuracies in reporting attendance, it is important to recognize that not everyone in the school system actively wants to improve attendance. There are understandable reasons why a few teachers and principals may hope that attendance does not improve. For example, a school which is already overcrowded with 75 percent in attendance would have a serious overcrowding problem if 90 percent of its pupils attended. Secondly, an absent troublesome student cannot cause the school or teachers any grief that day. It is no secret that teachers are not unhappy when certain bothersome students are absent.¹

However, most educators are concerned with the poor attendance patterns and would welcome practical and workable ways to attack the problem.

¹ Drop-out studies have often cited the desire for teachers and administrators to get rid of the misfits so that schools can function more smoothly. See, for example, the discussion in Lichtner, et. al., p. 267.

Analysis of Factors Related to Absenteeism

General framework for studying influences on absenteeism

Figures 2 and 3 are plots of the daily absentee rate for the junior high school used in the pilot study and the senior high school in the current study, respectively. As is apparent from these plots, the absentee rates vary markedly from day-to-day. What accounts for these day-to-day fluctuations in the school-wide rate? What possible factors influence an individual student to be absent? Are some identifiable groups of students more likely to be absent due to particular influences?

These questions are all of interest, but before attempting to answer them it is useful to set out an organizing framework. At least two dimensions need to be incorporated in such a framework. First, factors which influence attendance may be in effect over differing time scales. For example, a rainy day will probably only influence attendance on the day it rains. On the other hand, increased parental-school contact about attendance may influence a student's likelihood of attending for several days, or weeks. Second, factors influence students differentially, depending upon the students' particular characteristics. As an illustration, we can imagine that the likelihood of absence for students who ride the bus is greater on a rainy day than for students who come by automobile. Again,

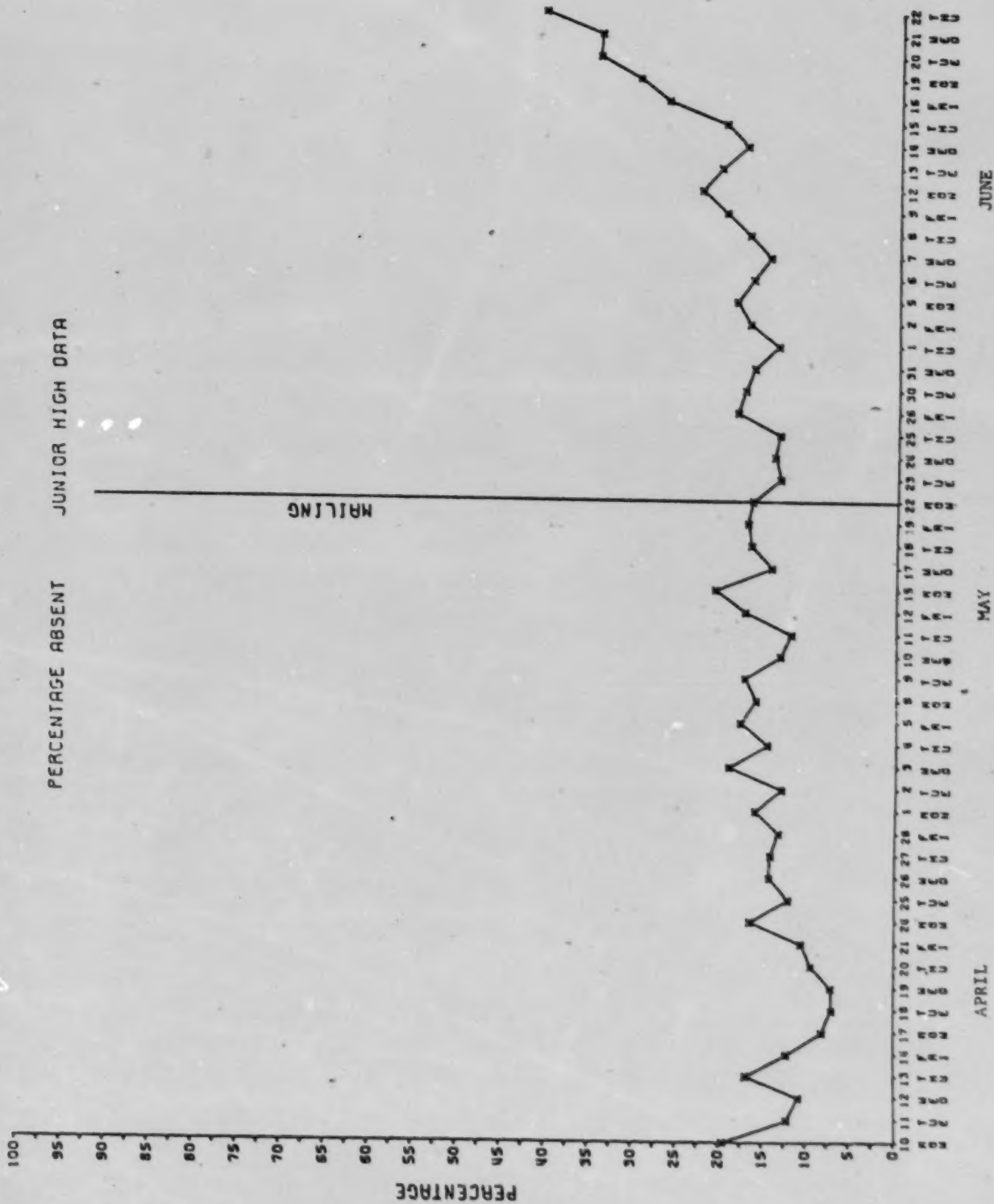


Fig. 2. - Junior High School Daily Absentee Rate

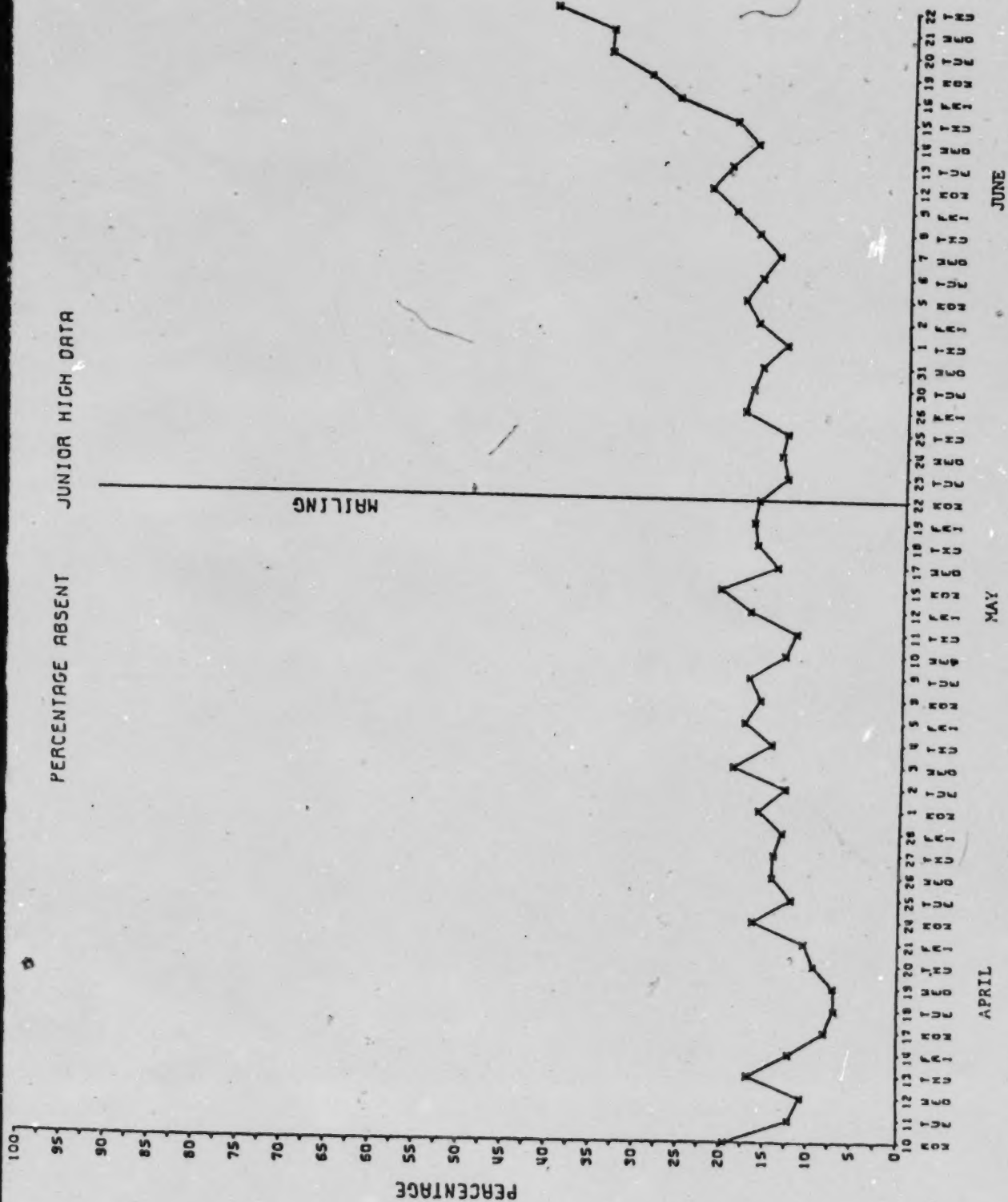
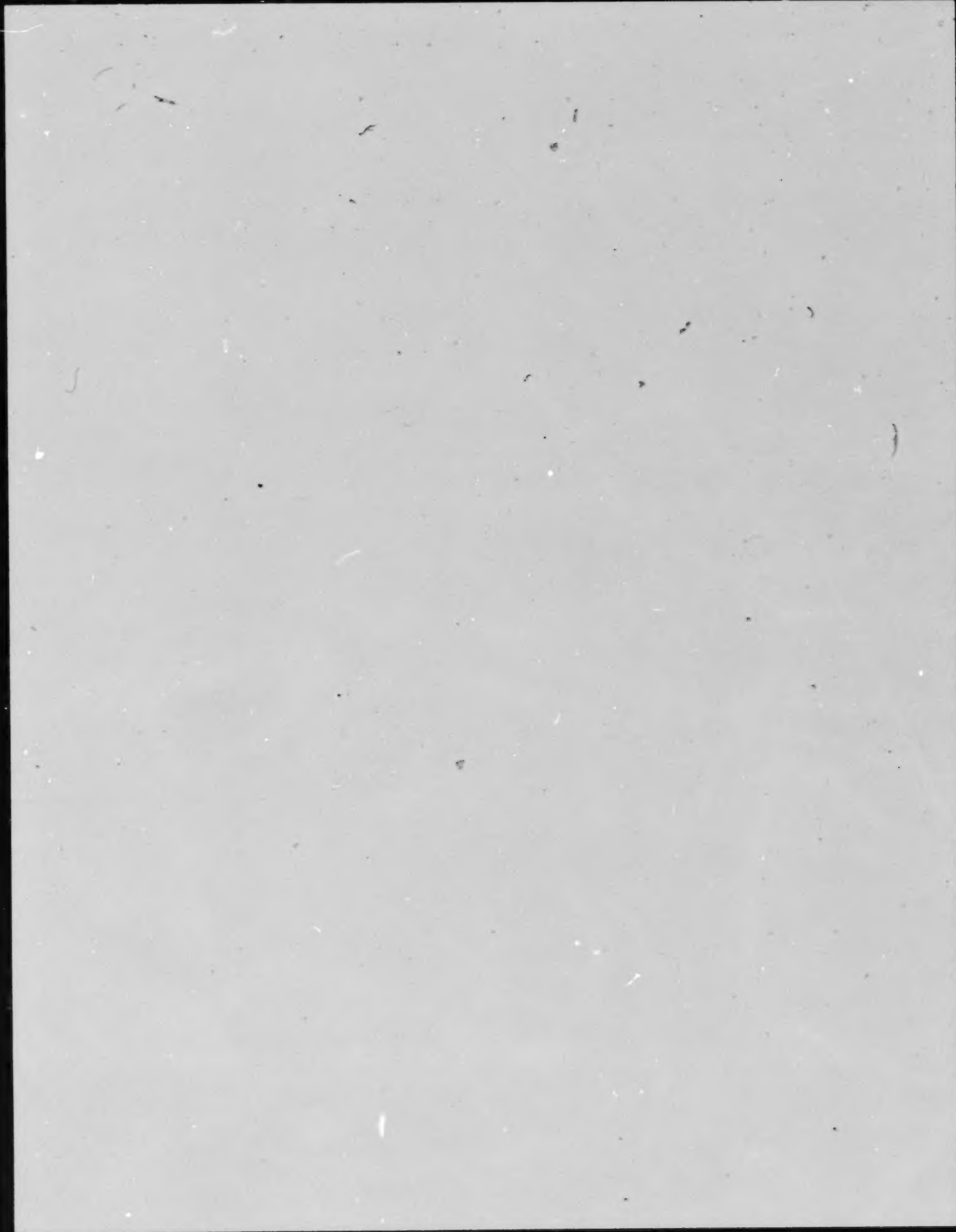
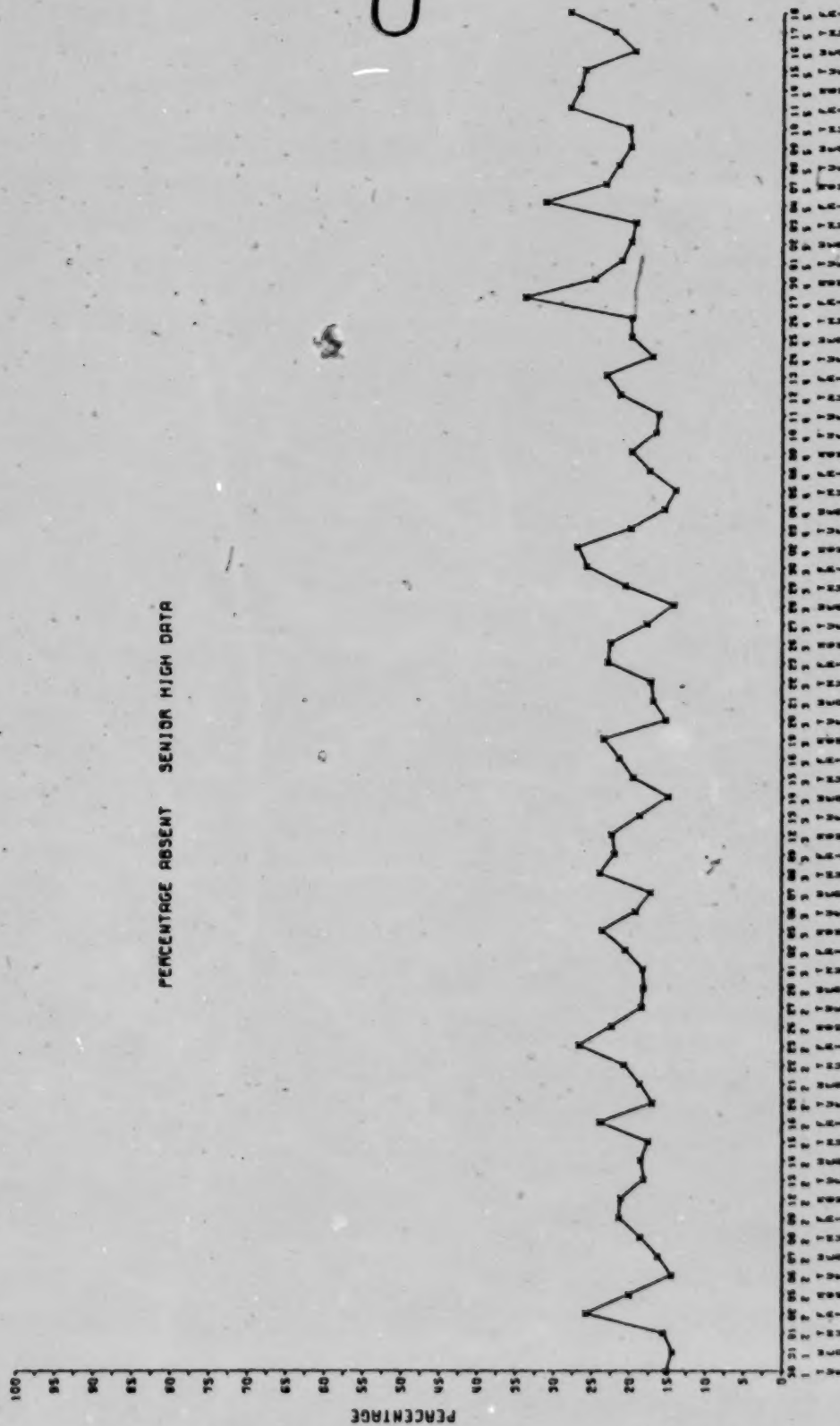


Fig. 2. - Junior High School Daily Absentee Rate







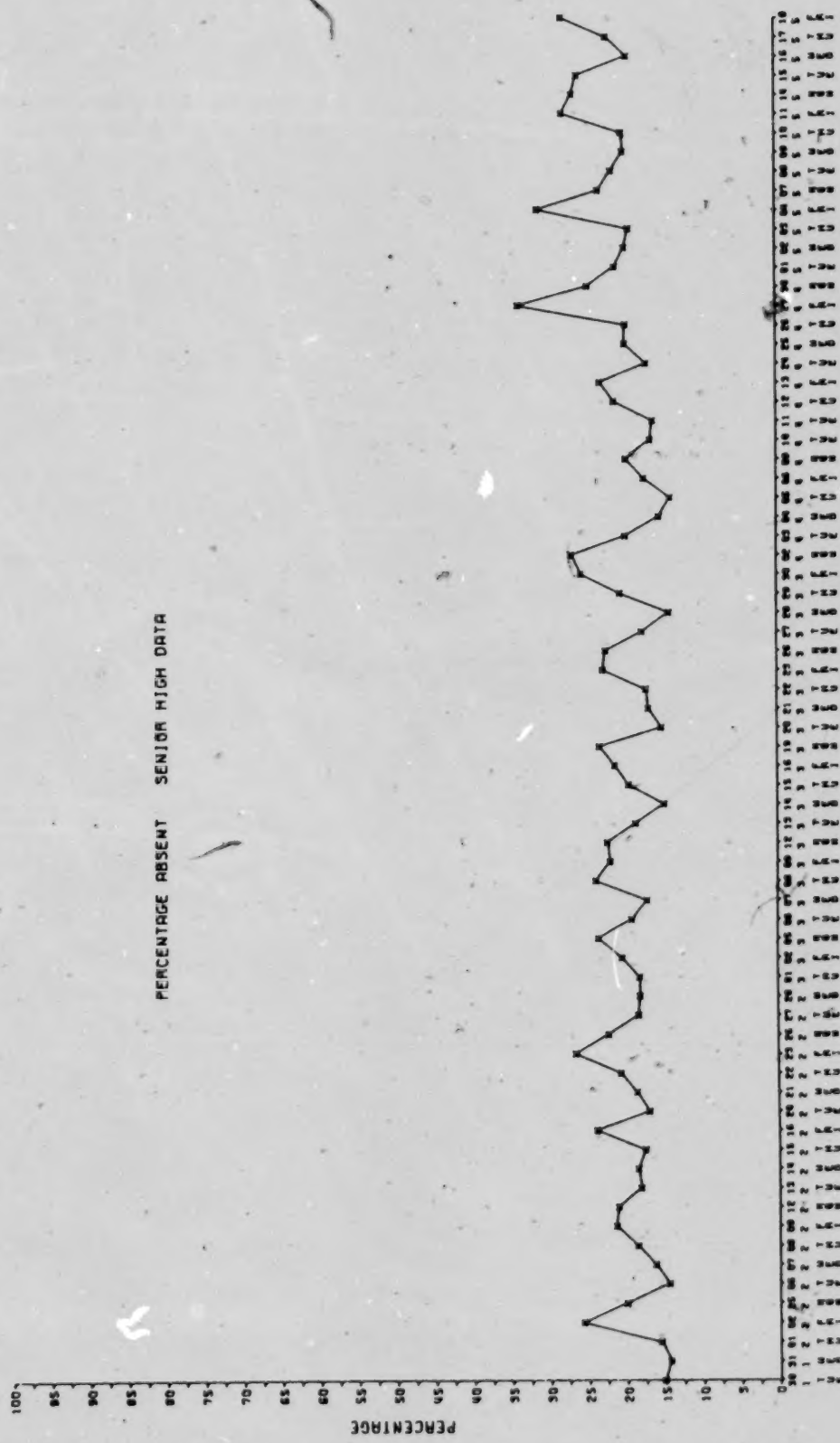


Fig. 3. - Senior High School Daily Absentee Rate

the likelihood of being absent on Monday is probably greater for some identifiable subgroup of the students. Finally, influences can be both positive and negative and our framework should incorporate this notion.

Figure 4 presents a framework for studying the possible influences on absenteeism. The column headings are the time scale and the row headings are the particular student group to be identified. The time dimensions include influences operating for one day, for several days, and for the whole period of time under study. Another category of "long duration" could be added, but for the sake of simplicity, anything in this grouping can be considered as a multiple of short duration influences. The student heading is divided to include a particular student, some subset of students, or all students. By several students, we may mean, for example, all students in a certain classroom, or all those in a certain club, or all those who ride the bus to school. Within each box are possible influences and a "+" or "-" to indicate the direction of their influence on attendance.

This framework, then, shows who is exposed and for how long to the various factors believed to influence absenteeism.

Sources for the Data.

Before analyzing the relationships between these various factors and absenteeism, it is appropriate to describe how the data were obtained. The sources of data were varied and the methods of collection included many techniques -- open-ended interviews, questionnaires, observations and computerized collection of daily attendance data.

1. Student Data

a. Daily attendance data.

Daily attendance data were collected for the period January 30 - May 18, 1973. These data on absence and lateness were collected as an integral part of the computerized attendance monitoring system.

	One Day	Longer Than One Day	Permanent (180 Days)
Particular Student	1 Personal Illness (-) Emergency (-)	2 Personal Illness (-) Home problems (-) Parents attend conference (+)	3 Involvement, success in school (+,-) Attitude toward school (+,-)
Several Students	4 Classroom Events (+,-) Club Activities (+)	5 Contact w/parent re attendance (+) Specific Incidents (+,-)	6 Chronic absentee problem (-) Specific Responsibilities (+)
All Students	7 Day of the week (+,-) Bad weather (-) Assembly (+) Standardized Testing (-)	8 Start of new semester, new school year (+) Time of the year (-)	9 Teacher-staff-student morale (+,-)

Fig. 4. - Influences on Attendance by Length of Exposure and Who Is Exposed

many of the features of this system were suggested by the shortcomings of the system used in the pilot study. The system is described in detail in Appendix A. In addition, we recorded the fall semester's cumulative attendance data.

b. Success-in-school data

Grades for all students for the fall and spring semesters were recorded from the school records. In addition, students who had been given special recognition (such as a page to the Maryland Assembly, school photographer, or winner of a school talent contest) were flagged as "distinctive" students.

c. School involvement

The number and type of activities or clubs in which a student participated were coded. These data came from club roster sheets, from other school records, and from a student questionnaire (see d, below).

d. Attitude toward attendance and school

We gave an 11-item questionnaire to the students to learn about their attitudes toward attendance, their views of why students were absent, their reasons for selecting this school, their activities in school, and their mode of transportation to school. Of the 1038 students in the school, there were 815 usable questionnaires. Appendix B contains a sample questionnaire.

e. Previous attendance problems

For each student in the school who had previously been contacted by the school about her attendance, we recorded the type of contact (letter, phone call, conference), the reason for her absence (illness, home problems, etc.), the date of the contact, and the date of a response (if a letter had been sent).

f. Open enrollment

By means of a student questionnaire and other techniques to complete missing student data, we determined for all students if this particular high school was the closest regular high school to their home.

2. School Data

a. Activities Log

We maintained a daily log of school-wide, grade-wide or particular club activity in the senior high school. In addition, the author visited the school approximately three days out of five and thus was able to pay careful attention to activities possibly affecting attendance.

b. Student Interviews

Approximately fifty students were interviewed in the cafeteria to learn about their reasons for absence and their attitudes and views of the school. No identifying information was obtained and there was no attempt to randomly select students. We attempted to ask the same questions of all students (see Appendix C).

c. Teacher Questionnaire

Teachers were also given questionnaires to determine their attitudes toward attendance and their evaluation of the attendance monitoring system. Appendix D contains this questionnaire.

3. External Factors

a. Weather

A daily weather log was maintained. Additional data in the form of monthly summaries were obtained from the National Weather Bureau for the January - May period.

Consideration of factors and how they influence absence

We will use the framework set out in the first part of this section to present possible factors and assess their influence on absenteeism. Notice that Figure 4 presents data in terms of who is exposed to possible influences. It does not postulate if or why the exposure is differentially effective for the students as a whole. For example, we know that students are probably affected differently by the occurrence of bad weather even though all are exposed to it. Our procedure will be to first describe the relationship between absenteeism and the variable under question and then proceed to examine what characteristics of students or the school are associated with the strength and direction of the influence.

1. Factors to which all students are exposed (types 7, 8, 9).

a. Day of the week (type 7)

As the plot of the senior high school exhibits (Figure 3), there is pronounced higher absenteeism on Monday and Friday each week. The average percentage absent for all Mondays and Fridays grouped together was 23.5 as compared with 17.8 percent absent for the mid-week.¹ This difference was significant at the .01 level.

This Monday - Friday peak follows a pattern typically cited in studies of absenteeism in industry. Absence from work on Mondays has been recognized since at least 1925 as a distinctive pattern of absenteeism (Size and Morale, 1953). The occurrence of high Monday-Friday absenteeism is witnessed currently in many urban school districts (New York Times, February 2, 1970). Interestingly, the

1. In this analysis, a Tuesday in a Monday holiday week was treated as a Tuesday, not a Monday. Apparently, a three-day weekend was sufficiently long to overcome the first-of-the-week blues, because absence on these specific days was not particularly high.

local junior high data (Figure 2) do not reveal the same Monday-Friday phenomenon. One explanation for this is simply that the Monday-Friday pattern is a reflection of a trend witnessed in the adult world, and junior high school students are less likely to be influenced by it because their parents' control regarding school attendance is more likely to be effective.

The pervasiveness of this pattern of Monday and Friday absence was further illustrated by a closer examination of the days of the week most frequently involved either singly or in combination in absence. In a five day week, there are 32 possible different patterns of absence, ranging from always present to always absent. We classified each student's weekly absence pattern from 1 to 32 and then looked at the distribution of patterns throughout the 14 weeks in our sample. Without exception, the most frequently occurring absence pattern for all weeks was either Monday-only absent or Friday-only absent. We wanted to determine which students exhibited this Monday - Friday pattern -- that is, if the same students were consistently absent on Monday or Friday or if this affected all students equally. Our procedure was to compute an expected percentage of absence on Monday and Friday based on the relative frequencies of Mondays and Fridays in the total sample of days. Assuming that an absence is equally likely to occur on any day, the likelihood of Monday absence, for example, will simply be -

$$\text{Probability Monday Absence} = \frac{\text{Number of Mondays}}{\text{Total Number of Days}}$$

We then computed for each student his actual proportion of absence occurring on Monday by finding how many of his total absences involved a Monday.

The difference between the expected and the actual proportion of Mondays or Fridays absent was computed for each student. These differences were then correlated with attitudinal and background variables. In this correlation, the students who were never absent were excluded from the analysis.

The Monday deviations correlated significantly with external factors, such as motherhood, and citing problems or emergencies at home as reasons for staying away from school. Monday deviations were not significantly correlated with in-school factors, however. It would appear that our common sense notion of Monday absence being related to the hanging on of the influence of weekend factors is probably correct.

Friday deviations, on the other hand, are related to attitudes toward school, grades and other school factors. One can imagine that Friday absence is a reaction to the school situation -- be it boredom, avoiding a test or a teacher -- and that Monday absence is a continuation of the influence of out-of-school factors.

b. Assemblies and school wide events (type 7)

To compare the effect of assemblies, we need to control for day of the week because of the extent to which day of the week influences absenteeism. Table 2 presents the figures for Monday through Friday comparing assembly and no-assembly or special- events days.

Unfortunately, the relative scarcity of assembly days makes these comparisons difficult. Also, the importance attached to one specific assembly may be much greater than to another one.

Table 2

Absentee Rates on Assembly/No Assembly Days				
	Assembly		No Assembly	
Monday	No Data		23.9%	(12 days)
Tuesday	19.3%	(2 days)	18.2%	(13 days)
Wednesday	16.1%	(3 days)	17.6%	(12 days)
Thursday	20.1%	(1 day)	17.6%	(12 days)
Friday	23.4%	(2 days)	25.9%	(13 days)

c. Rain (weather conditions) (type 7)

Because the majority of the students ride the bus to school, we can expect to observe some difference in absenteeism and tardiness on rainy days as opposed to clear days. The day of the week was controlled for in presenting the data in Table 3. The day was classified as "Rain" if there was any measurable precipitation during the AM hours (6 - 9) when students would be traveling to school.

As Table 3 illustrates, there is a tendency for absence to be greater on rainy days. We would expect to see greater tardiness on rainy days due to poor road conditions; the greater absence is an indication of how marginal is the probability of coming to school for some students. In other words, given an additional distraction such as bad weather, some subset of students will decide not to come to school at all.

d. Time of the Year (type 8)

As both figures 2 and 3 illustrate, there is a trend for increased absenteeism at the end of the school year. The rates in the months February - May were 19.58, 19.86, 20.33, and 23.29, respectively.

In the previous year, the junior high showed the same end of the year trend. This trend is apparently witnessed throughout the

Table 3

Percent Absent and Tardy
by Day of the Week and Rain/No Rain

	Monday	Tuesday	Wednesday	Thursday	Friday
Rain	23.9% (4 days)	22.2% (3 days)	17.2% (6 days)	20.6% (4 days)	26.1% (6 days)
No Rain	22.6% (8 days)	17.4% (12 days)	18.2% (9 days)	18.7% (11 days)	23.7% (9 days)
Rain	8.7% (4 days)	11.5% (3 days)	6.1% (6 days)	10.1% (4 days)	7.4% (6 days)
No Rain	8.1% (8 days)	8.1% (12 days)	8.1% (9 days)	8.3% (11 days)	7.4% (9 days)

city since the average absentee rates for all junior highs during April, May and June of 1971 were 20.8%, 23.5%, 26.3%.

We can probably attribute this rise in absenteeism at the end of the school year to an increase in pleasant weather and general anticipation of the summer recess.

Other fluctuations due to the time of the year have been noted in studies of absenteeism in industry. The usual finding is an increased rate in the winter time attributable to greater incidence of flu and contagious diseases. Our sample, as noted previously, did not show this pattern of higher absence in the winter months of February and March. Since no consistent distinction is made between excused and unexcused absences, the relative frequency of sickness as cause of absence is impossible to determine with certainty. One way that we can shed some light on this is to examine patterns of absences. We would suspect that illness due to flu or a bad cold would result in an absence of more than one consecutive day. In the winter months we would expect the length of absence (as measured by the number of

consecutive days absent) to be longer than in the spring months even though the absolute number of absent days in April and May were greater. To test this hypothesis, we divided the 72 days into 4 equal quarters and compared the length of absences in these quarters.

The average length of absence in the quarters were:

Quarter 1	(January 30 - February 23)	1.34 days
2	(February 26 - March 21)	1.48 days
3	(March 22 - April 24)	1.45 days
4	(April 24 - May 18)	1.78 days

As these results indicate, the length of absences increases on the average toward the end of the school year. Although it is possible that this increased length could be due to medical factors, it seems more reasonable to assume that attitudinal factors contribute to this increased length. Length of absence correlated significantly with attitudinal measures (with attitude toward mandatory school, $-.11$; with citing boredom as cause of absence, $-.11$; with citing avoiding a test as reason for absence, $-.14$).

Thus, time of the year works to both increase the length of absence and, relatedly, the number of absences.

e. Teacher/staff attitude toward attendance (type 9)

Although this particular study is not able to relate specific teacher or staff attitudes and actions regarding attendance to the actual attendance of the students, it is useful to present these as background information.

In a questionnaire, teachers and staff were asked what they thought could be done to improve attendance (see Appendix D for the questionnaire). The responses were varied, but can be roughly categorized into three types -

- 1) Responses involving making changes to the school environment (N=20)
- 2) Responses involving stricter enforcement of attendance rules (N=19)
- 3) Responses suggesting greater parental contact and student counseling (N=23)

Some teachers gave more than one way to improve attendance. Under reforming the school environment we classified such responses as --

- improve instruction
- abolish mandatory school
- use written evaluations rather than grades
- exhibit more personal interest by teachers and staff.

There was strong sentiment expressed for stricter enforcement of attendance rules. Measures suggested were --

- fail excessively absent students
- detention after school
- send students home
- withdraw students
- take legal action against parents.

Many teachers said there should be an attendance requirement for passing a subject. In fact, the most frequently cited procedure was to fail the student if she was excessively absent. There was some sympathy for this from students (as expressed in interviews) who felt it was unfair for students to pass who came very infrequently to school.

Finally, many of the teachers and staff thought that attendance could be improved by counseling the students and parents. Under this classification, some measures given were --

- increase contact with parents
- stress the importance of good attendance
- provide group and individual counseling.

To summarize, the most frequently cited measure was the adoption of an attendance requirement for passing a course. Held to be almost as important in improving attendance was increased contact with the parents and a reform in the instructional program.

Teachers were asked why they thought students stayed away from school. In order of importance, teachers listed home problems, caring for someone else at home, boredom with school, bad weather, and personal illness as reasons for absences.

2. Factors to which some group of students is exposed (types 4, 5, 6)

a. Open enrollment policy and effects of transportation mode and time

In Baltimore, a student may choose to attend any school in the city. Free bus transportation is provided for those living more than one mile from the school they choose to attend. Opponents to this policy of open enrollment say that the availability of free transportation and the increased travel time leads to greater absenteeism and truancy. The administration of the free bus transportation program may differ from school to school. Typically, a month's supply of bus tickets are dispensed to eligible students at the end of the month. These tickets have a date stamped on them and are usable on that date for transportation anywhere on Baltimore Transit Company buses. There is no school designation on the tickets and no one to verify that a student is riding the bus to attend his school. Obviously, misuse of the tickets will occur. At one point in the history of the program at this particular senior high school, many students would come only on the day the tickets were dispensed. To stop such flagrant misuse, the school adopted a policy of giving tickets on a daily basis

to any student absent more than 5 days in the preceeding month. This daily ticket operation takes more time to administer, but has reduced the instances of obvious and blatant misuse.

To learn if the open enrollment policy was related to absenteeism and lateness in this particular school, we compared the attendance behavior of two groups of students -- those for whom this high school was the school closest to their home and those who could attend another high school closer to their home. A major drawback in dividing the students in this fashion in order to learn about the effect of the open enrollment plan is that students living closest to this high school might have chosen it over other schools regardless of location. We can't conclude that the students living closest to the school came to it because it was nearby -- they might have come for the curriculum or other reasons even if the school were located elsewhere. What we can learn, however, is if the students not attending the high school closest to their home have poorer attendance records than the rest of the students. In the questionnaire, students were asked if this high school was the high school closest to their home. Of the students answering this question, 289 responded yes, the remaining 541 said it was not the closest to their home. For the 281 students with no data on this question, we determined whether it was the closest regular high school by locating their home on a city map and visually checking if any other high school fell in the circle cut by this school and their home. After completing this approximation, we had obtained data for 1016 of the 1036 students. (The 22 students without data had questionable, unreadable, or unfindable addresses.)

Table 4 presents data for absences and lateness for the fall and spring semesters for these two groups of students. There is virtually

no difference in absences or lateness depending upon whether or not students attend the school closest to their home.

Table 4
Days Absent and Late
by Closest, Not Closest to Home

	<u>Spring*</u>		<u>Fall</u>	
	Absent	Late**	Absent	Late
Closest School to Home N = 349	14.6	5.68	15.6	13.4
Not Closest to Home N = 649	14.9	5.82	15.7	14.1

* January 30 - May 18 only.

** Tardy data computed differently in the spring and fall semesters. Fall data include any tardiness (homeroom period as well) whereas spring tardiness is based on lateness to class only.

However, care must be exercised in interpreting this lack of difference between the attendance of the closest/no closest-to-home groups. What may be most important is not distance from home, but how long it takes a student to travel from home to school and how inconvenient the traveling is. For example, a student may choose to attend a school not the closest to his home because it is easier to get there than to his "local" school. If this student lived about a mile (but less than a mile) from the school he would be ineligible for free bus transportation. Walking to the closest school may actually take more time than riding the bus to a school further away.

We then need to examine if travel time and mode of transportation are related to absenteeism. In the student questionnaire, we asked students how long it took them to travel from their home to school and whether they walked, came by automobile, or by bus. If they came by bus, we asked if they had to transfer to another bus en route.

There were 798 students who answered the question regarding travel time to school. An approximation for some of the missing travel time data was carried out by the following procedure. The students who did not answer the questionnaire were matched with those who did and who had the same block and street address. If there were several students in the same block and street address and differing travel times were reported, the minimum time was used as an estimate. We used the minimum time because we reasoned that students were less likely to underestimate their travel time than to overestimate it. In most cases, these differences were on the order of 5 minutes or so. Estimations were attempted only in cases where there were exact block and street matches. After completing this approximation, the number of students with data on this question was 898.

The correlation between travel time to school and days absent and late was .075 and .042 respectively. These small correlations indicate that there is no significant relationship between travel time and days absent and late. The relatively smaller coefficient for lateness is probably due to the fact that we are not talking about lateness to homeroom, but to class. In addition, there may be bias in reporting travel time, with the disinterested students exaggerating their travel time. On the basis of these data, there is no evidence to associate increased travel time alone with increased absenteeism.

However, when we examine the relationship between mode of transportation (bus, car, walk), differences in attendance behavior become apparent. The bus riders have higher absenteeism than the girls who come by car or walk (13.9 days, 7.4 days and 13.1 days respectively). Of the bus riders, those who have to transfer on the bus line have significantly worse attendance than those who do not. For example,

the mean number of days absent for bus transferers was 13.3 days as compared with 10.8 days for bus riders who do not transfer.¹ The same significant relationship was true for lateness as well. These averages and associated F statistics are summarized in Table 5.

Table 5
Absences and Lateness by Bus Transfer

	<u>Fall</u>		<u>Spring</u>		Average Travel Time
	Absence	Lateness	Absence	Lateness	
Transfer	13.3 days (N = 542)	6.1 days (N = 542)	14.9 (N = 542)	14.9 (N = 542)	45 Minutes
No Transfer	10.8 days (N = 177)	4.9 days (N = 177)	11.0 days (N = 177)	11.2 days (N = 177)	28 Minutes
F ratio	7.2	3.2	12.7	10.4	10.1
Significance level	<.01	<.01	<.01	<.01	<.01

The reason for this difference may be partially a dislike for waiting for a bus in bad weather. A comparison of the absentee rates on rainy days for bus riders who transfer and those who do not transfer bears out this hypothesis. The average percentage absent for bus transfers on rainy days was 19.8% whereas for bus riders who do not transfer it was 15.7%. The rates for these two groups on rainy Monday and Fridays were 24.4% for bus transfers and 19.2% for the bus riders who do not transfer. Another less obvious factor, cited in interviews with students, was fear for their personal safety when waiting at bus transfer points.

¹ Of the 764 students who stated they rode the bus, 45 did not answer whether or not they transferred. Consequently there is a discrepancy between the average for all busriders (13.9 days) and bus transfer (13.3) and no transfer (10.8 days).

To determine other reasons why students transferring on a bus are poorer attenders, we need to examine why students living so far away come to this school in the first place. In some instances, students may be transferring into this school from one closer to their home because of discipline or other adjustment problems at the original school. These students are more likely to be poor attenders in any school, although a new school setting could ameliorate this tendency. On the other hand, some students selected this high school over one closer to their home because of its reputation, its curriculum, or because their friends went there. To state the problem simply, do the bus riders who transfer contain a disproportionate number of students who would be poor attenders anywhere?

A major difficulty in this analysis is that most indicators of adjustment to school are, in fact, partially indicators of attendance behavior. For example, we might use conduct grade received as a indication of discipline problems, but many teachers give students unsatisfactory conduct grades precisely because they were excessively absent. Of course, there are instances when students with excellent attendance receive "unsatisfactory" conduct grades and vice versa. Given the usual situation, however, it is predictable that the poorer attenders will also, on the average, receive lower conduct grades. In the case of the bus transferring students, 11 percent received unsatisfactory conduct marks as opposed to 8 percent for the non-transferring students. This difference is not significant and is, as stated earlier, not an unbiased indicator of discipline problems, being contaminated by its use for various purposes.¹

1. Correlation between conduct grade received (unsatisfactory = 1 to excellent = 5) and days absent was $-.134$.

Another indicator of adjustment to school that might tell us if the bus transferrers are a different population is a question regarding attendance desires if school were not mandatory. Students were asked how often they would attend if school were not mandatory. Comparison of responses show that 28 percent of the transferring students answered seldom or never as opposed to 23 percent of the non-transferring students. This difference in percentages was not significant, so it is not possible to confidently say the bus transferrers are a significantly more dissatisfied group. Along the same line, we compared their responses to the question dealing with satisfaction with this particular school. Both groups are highly satisfied with the school, with 87 percent stating they would recommend this school to another student considering attending it.

Finally, we compared the reasons for selecting this school as indicated by these two groups. There was no significant difference between the groups on any of the selection reasons. About 13 percent of the students who transfer on the bus as opposed to 5 percent of the non-transferers chose the school because their friends attended it. This item showed the largest difference, but was not significant. The next largest difference was on the selection on the basis of special courses, with 42 percent of the transferers citing this as a reason compared with 47 percent of the students who did not transfer.

Open enrollment-travel conclusions

For students in this particular high school, attending a school not closest to their home was not a significant factor in absenteeism. Nor was travel time by itself associated significantly with absenteeism. Bus transferral was significantly related to

higher absenteeism, but this result was possibly contaminated by the selection reasons for students who wish to travel so inconveniently to school.

b. Open enrollment policy and effects of selection reasons

As the discussion of the effects of the open enrollment policy indicated, there are diverse reasons why a student may choose to attend a school far from his home. Some of the students come because they are drawn or attracted to the school, others because they may feel they are being pushed out of another school. Again, some of the students choose the school for its academic offerings, others because of the particular social setting.

It is reasonable to suggest that students who selected this particular high school for some feature of the school (academic or social) are more likely to be better attenders than those who did not. Of course, the actual attendance is determined by many intervening events; how these are inter-related will be discussed later.

In the questionnaire, students were asked why they selected this particular high school if it was not the closest regular high school to their home. Five reasons were offered and the students could check as many as they thought applied. If they checked OTHER, we asked them to indicate why. The reasons for selection and the percentage citing each are given below:

My friends come here	12%
Special courses offered	44%
All girls school	26%
My parents wanted me to	21%
Other	43%

We then compared the absence data for those citing a particular reason and for those not citing it. Table 6 summarizes these results.

Table 6
Days Absent by School Selection Reason

	<u>Average Days Absent</u>	
	Not Cited	Cited
Friends come here	12.23 (N = 471)	13.81 (N = 64)
Special Courses	13.07 (N = 302)	11.58 (N = 233)
All girls school	11.93 (N = 394)	13.8 (N = 141)
Parents wanted me to	12.70 (N = 424)	11.33 (N = 111)

Students who said they selected this school because of the special courses offered are significantly better attenders than those not citing the special courses as reasons. This particular high school was designated as a magnet school for business and has an IBM 1130 computer, several keypunches, verifiers and peripheral data processing equipment. Several computer programming classes and keypunching courses are taught. In addition, the school provides computer services for other high schools in the city. Across all curricula (Regular, Business, College Preparatory, General Academic), students who indicated they chose the high school on the basis of special courses had better attendance than those who did not cite this as a reason. Table 7 presents these results.

Table 7
 * Comparison of Average Days Absent for those Choosing or not Choosing
 School because of Special Courses

Curriculum	Yes (cited)	No (not cited)
Regular	10.97 (N = 80)	13.56 (N = 172)
Business	11.04 (N = 80)	12.49 (N = 102)
College Preparatory	7.75 (N = 24)	9.20 (N = 68)
General Academic	11.8 (N = 30)	13.17 (N = 58)

Another frequently cited reason for selection of this school was the fact that it is an all girls' school. In interviews, students often stated they chose this school because they wanted to get away from the social pressures of a co-educational environment. (The social pressures may come about from being too popular or not being popular enough.) Many indicated they believed they could learn more in an all girl environment. Along this same line, many students said they thought they could concentrate better on their education in an anonymous school setting. Several students explained that they specifically selected this school to get away from their friends. This attempt at escape from peer tyranny partially explains why only 12% of the students said they selected this high school because their friends attended.

c. Change in parental-school contact (Type 5)

This particular high school kept excellent records of contacts with parents about attendance. Although many of the chronic and serious absence problems had been addressed by the school, other students who

possibly could have better attendance records had never been contacted by the school. Also, no systematic evaluation of the effect of contacting parents about attendance problems had been carried out. Many teachers (as expressed in their questionnaire) thought that much of the attendance problem was due to the parents' non-awareness of their daughters' poor attendance behavior.

In order to give parents attendance information and to study, in a systematic fashion, its impact on the students' attendance behavior, we planned to mail letters to a random sample.

The students were divided into five groups on the basis of their attendance in the first 60 days of the spring semester. An absence indicator, which combined days absent and days late by the formula below, was computed for every student.

$$\text{Absence Indicator} = \frac{\text{days absent} + 1/6 \text{ days late}}{\text{days on roll}}$$

This absence indicator roughly approximated the percentage of time a student was absent from school, either due to a full day's absence or to lateness. We wanted lateness to enter into the classification of the students because it is also a significant problem at the school. The average value for the entire school for the first part of the semester (up until the spring vacation) was 21.9%. Students were classified into 5 groups on the basis of this indicator. These groups ranged from excellent attenders (absent at most 2 days) to chronically absent students (absent 40 or more days in the 60-day period). Within these five groups, half the students were randomly selected to receive letters, while the other half served as the control group in assessing the impact of the mailing. The number of students in each group and their mean values on the absence indicator are given in Table 8.

(Table 8 presents data only for students in school for the entire second semester, thus the size of the letter group is smaller than were sampled.)

Table 8
Average Values on Absence Index for Control and Experimental Groups

Letter (Experimental)			No Letter (Control)
Excellent	I	1.23 (87)	1.16 (109)
Good	II	7.67 (93)	7.93 (111)
Average	III	15.69 (99)	16.39 (116)
Poor	IV	38.19 (184)	36.74 (199)
Chronic	V	78.37 (16)	77.65 (23)

Each of the five groups received a different letter, varying from congratulatory in tone to mildly threatening. Samples of each letter type are given in Appendix E. These letters, a total of 518, were printed on the computer to save time and to allow easily printing the total number of days absent and tardy for each particular student. After the front page of the letter was printed, the sheets were reversed and fed into the printer again so that names and addresses could easily be put on. This one page letter was then folded, taped closed, and stamped for mailing.

Two steps were taken to minimize the chance that students might intercept the letters intended for their parents. The return address which was used was not that of the high school, and the letters were mailed so that they would be delivered on a Saturday when working parents would most likely be at home.

Of the 518 letters mailed, 25 were returned because of invalid addresses. These 25 students were deleted from the experimental treatment group.

Impact of the Mailing

To assess the impact of the mailing, two different approaches will be used. One approach is to see if parental concern about attendance was affected, the other approach is to see if actual attendance behavior of students changed.

At the same time the letters were being prepared, each homeroom teacher was given a list of students who were to receive letters. The homeroom teacher was asked to record on these sheets any contact by the parents regarding attendance. Some counselors, the principal, and administrative aides in the main office were given similar sheets with names for the entire school.

Although we did not ask parents to contact the school, we expected that some would call the school for clarification of the information in the letter. Specifically, if the information in the letter was at odds with what the parents believed their daughter's attendance to be, we thought they would contact the school. We did not expect the parents who received congratulatory letters (Types I and II), or the parents who had previously been contacted by the school about their daughters' attendance, to call the school. Of the 493 parents receiving letters about attendance, only sixteen contacted the school. Most indicated that they were not aware of their daughter's poor attendance record; some others questioned why they had received such a letter when their daughter had been out only for legitimate reasons. This low contact rate from parents would seem to indicate that, by and the large, the information in the letter was not at variance with what the parents knew already.

In the few cases where the parents called to say they were unaware of their daughter's poor attendance, no systematic improvement

was seen. In some instances dramatic improvements were brought about; in others, despite parental awareness, absenteeism continued as before.

To determine whether the mailing had any real impact, we compared the attendance behavior of the control and experimental groups in the days following the mailing. The data were cleaned so that only students who were enrolled in school for the entire comparison period (January 30 - May 18) were included. After this cleaning process, 1038 students remained, 479 of whom received letters.

Two separate comparisons were made -- one on lateness, one on absence for the five groups. Although students were selected into groups on the basis of absence and lateness, for analytical purposes it is clearer to consider them as separate variables. For example, lateness and absence are probably affected differently by weather conditions and transportation difficulties.

The experimental and control groups were compared on the proportion of days absent (late) in the nine days following the mailing. The choice of nine days was somewhat arbitrary; fewer days or more days could have been used. However, nine days included a full school week and a four-day school week with a Monday holiday and seemed long enough to be a stable estimate. If there was an effect of the mailing, it would probably be strongest closest to the day it was received, wearing off in time.

The Z test for difference in proportions was used to test for attendance improvement following the mailing.¹ (Guilford, 1955).

1. This statistic is computed as

$$Z = \frac{P_1 - P_2}{\sqrt{P_e Q_e \frac{(N_1 + N_2)}{N_1 N_2}}}$$

$$\text{Where } P_e = \frac{N_1 P_1 + N_2 P_2}{N_1 + N_2}$$

$$\text{and } Q_e = 1 - P_e$$

All proportions are based on the nine-day period following the mailing. Table 9 gives the Z scores for absence and lateness for the particular groups. None of the groups showed a significant difference due to the mailing. Group II (good attenders) letter receivers were consistently lower than their control groups throughout the post treatment period. However, examination of the data prior to the mailing reveals several runs of days when one treatment group is lower than the other. Consequently, one could not legitimately use this as a criteria for effectiveness.

Table 9
Letter/No-Letter Z Scores

		Absence	Lateness
Group:	I	.045	.076
	II	-.317 *	-.090 *
	III	-.025 *	.057
	IV	.015	-.080 *
	V	.063	.013

* (A minus indicates improved attendance)

We thought the letter might be differentially effective, having its greatest impact in cases where the parents had not previously been contacted by the school. To determine if this were true, we maintained a record of the routine parental contacts carried out by the school. We then compared the attendance in the post-nine days of students for whom the letter was the first contact. The only letter groups large enough to compare in this fashion were groups IV and V (serious and chronic absentee problems). Table 10 gives the average number of days absent and late for group IV and Group V, controlling

on whether or not this letter was the first contact. These tables show that the "newness" of contact from the school was not an important factor in the effectiveness of the mailing.

Assuming that, after the mailing, parents knew about the attendance behavior of their daughters, we have to conclude that a simple increase of information by itself will not help greatly. It helps in a few cases where the parents are unaware of the problem and are willing and have enough control and rapport with their daughter to insist on a change. In many cases, there is little the parents may feel they can do.

Table 10
Average Number of Days Absent/Late
after Mailing by Previous or First Contract

	Group IV - Average # days		Group V - Average # days	
	Previous Contact	First Contact	Previous Contact	First Contact
Letter	4.7 N = 33	3.6 N = 154	8.4 N = 6	7.1 N = 9
No Letter	4.0 N = 31	3.7 N = 154	7.1 N = 6	7.1 N = 14

There may be several reasons for the ineffectiveness of the mailing in improving attendance. Perhaps the most important is that this letter was simply a repeat of a similar theme heard often by parents of many of the girls. In many instances, this was not new information and parents may have even resented the school reminding them of their daughters' attendance behavior.

Another reason for the ineffectiveness of the mailing was its occurrence near the end of the school year. Students' records for this academic year had by and large been determined, and any dramatic changes may not have gained them that much. Letters sent at the

beginning of the school year, when hopes are still high and changes have time to occur, would probably be more effective.

3. Factors to which individual students are exposed (Types 1,2,3)

a. Satisfaction with school/attitude toward attendance (Type 3)

In the questionnaire, students were asked how often they would want to come to school if school attendance were not mandatory. Of the 813 students answering this question, 216 said they would come never or seldom, and 597 said they would come often or always. This attitude toward school attendance is reflected in actual attendance behavior with the never/seldom attend response group being absent an average 14.8 days as compared to an average 11.7 days for the often/always attend group.

The same pattern was true for those who said they would recommend attending this high school to a friend. For those who said they would definitely or probably recommend this school, the average days absent were 12.35 as compared with 14.23 for those not recommending it.

Some students exhibited inconsistent attendance behavior in view of how often they stated they would like to come to school. We classified the students into four groups --

Type A (N = 115) Don't want to come, but do
Type B (N = 192) Want to come, but don't
Type C (N = 101) Don't want to come and don't
Type D (N = 405) Want to come and do

In this classification, types A and B behave inconsistently. In a project aimed at improving attendance, students of Type B are of particular interest. What prevents them from attending more regularly? One obvious possibility is the occurrence of events beyond their

control -- be it personal illness, family problems or particular emergencies. In interviews, students frequently stated they had missed school for reasons other than personal illness -- such as looking after a younger child. To be sure, some students view any excuse as a legitimate reason to miss school, ranging from staying home to let the meter man in to read the meter to keeping dental appointments which could be made for after school hours. Also, interpretations based on expressed desires are rather tenuous. It entails no penalties or obligations to express an opinion regarding school attendance, and we had no way to account for flippant or "socially desirable" answers. Keeping these weaknesses in mind, if we accept at face value the students' desire to attend, learning what prevents them from attending may still be important if we are to improve attendance. In the student questionnaire, type B students (when compared to the other three groups) most often ranked "caring for someone else at home" and "problem/emergency at home" as reasons for absence from school. This group also had the greatest percentage of infants of their own, as measured by the number of students transferring in and out of this school to a special school for pregnant students in Baltimore City. This result is biased by the fact that not all young mothers are included in the comparison group because many pregnant students do not attend the special school. However, comparison of the days absent on this single item shows that students with small infants have significantly worse attendance than those without (24.1 days to 14.1 days absent). Other child care duties, such as regular clinic visits, also contribute to the absenteeism.

This group of young mothers is particularly subject to random, outside-of-their-control events, which may affect their attendance. Their children's illnesses, or lack of a babysitter, are additional reasons for absenteeism. The school cannot change their home situation; the school can through counseling and interest be supportive and perhaps ameliorate to some extent the effects of a disruptive home situation.

The other inconsistent students are the ones who say they would like to come never or seldom yet are, in fact, above average attenders (Type A). For this group, "parents expect me to" was the most important reason for school attendance. These students are conforming to their parents' wishes with regard to attendance; they may be likely candidates for poorer attendance in the future.

b. School success (Type 3)

Success in school is conventionally indicated by the achievement of good grades or attainment of other academic distinctions. A student's success in non-academic endeavors also is undoubtedly important in his opinion of and attitude toward school.

Distinction in some endeavor at school, be it academic or non-academic, should enhance the likelihood of regular school attendance. Along this same line we would expect the students who are involved in the school, as indicated by participation in extra-curricular activities and clubs, to be regular attenders. In contrast, the uninvolved, unsuccessful student will not view school as very attractive, and given anything better to do will opt for it instead of attending school.

To determine the degree to which grades and attendance are related, we recorded the subject grades for all the students in our

senior high school. One major difficulty in this comparison is that excessively absent students frequently do not receive any grade, having been absent too often for the teacher to grade them. Another factor is that many teachers (about a third) favor having an attendance requirement for passing a course. These teachers may knowingly or unconsciously grade down a student who is often absent.

We computed a grade average for each student, based on all the subjects she took during the first semester and again for the second semester. The correlation between grade average and days absent was $-.685$ --indicating a very definite and inverse relationship between days absent and grades received. This computation did not include most of the chronic and many of the problem attenders, as there were insufficient grade data for them.

It may be argued that this correlation between grades and attendance is artificially high due to the free influence of IQ. IQ measures were available for only 208 of the students. The partial correlation between grades and attendance, holding IQ constant for these students, was $.636$. The zero order correlation between IQ and grades was $.259$ and between IQ and attendance was $-.148$. These results suggest how important attendance is in determining a student's grade.

Another area we will investigate is the influence of length of absence on average grade received. One can imagine that longer absences whereby students miss several consecutive days of classwork might be more detrimental to grade attainment than shorter absences.

To discover if this were true, we compared the proportion of absences occurring as one-day absences, two-day and so forth, for 5 levels of grade average -- below 60, 60-69, 70-79, 80-89 and 90-99. These proportions are given in Table 11.

The most striking result from Table 11 is that the majority of absences occur as one-day, two-day or three-day absences. One notes as well that the students receiving the highest grades (90-99) are also the best attenders with 20 percent never being absent in the 72-day period. The failing students on the other hand show a tendency to longer absences which is not seen in the other groups. The zero order correlation between average grades and average length of absence was $-.31$.

These results are not uncontaminated by the teacher's attitude toward establishing an attendance requirement for passing a course. However, these results still suggest that holding make-up sessions and tutoring students who have missed several consecutive days may help reduce the deleterious effect of absence on grades received.

To determine the relationship of achievement in non-academic areas to school attendance, we identified students who had been given special distinctions for non-academic endeavors. These are the students who are visible in the school because of special skills (the school photographer), or talents (winners of music contests), or responsibilities (operating the daily attendance system): in this same group, we classified students who had been named to Who's Who in American High Schools, who had served as Pages to the Maryland General Assembly or who had been on a varsity sports team. We loosely called all these the

Table 11

Average Grade Received by Percentage of Absences
As One - Ten Consecutive Days Absent

	Failing (N = 108)	60-69 (N = 228)	70-79 (N = 372)	80-89 (N = 240)	90-99 (N = 40)
Never Absent	2.7	1.0	3.1	7.7	20.5
One Day	50.8	68.6	73.7	77.8	66.8
Two Days	18.6	17.2	15.4	9.1	7.3
Three Days	10.1	6.2	3.35	2.4	4.9
Four Days	6.3	2.9	2.1	1.2	-
Five Days	2.6	1.6	.95	.54	.50
Six Days	2.5	.77	.45	.41	.50
Seven Days	2.6	.44	.27	.14	-
Eight Days	2.0	.61	.10	.14	-
Nine Days	.72	.31	.18	-	-
Ten + Days	.77	.18	.42	.69	-
	100%	100%	100%	100%	100%

"visible" students. Our classification probably missed a number of students who should have been included. Also, we did not attempt to learn which students were "visible" for different, less desirable reasons. A real troublemaker in the school is also very visible and probably as well known as students distinguished for more socially acceptable reasons.

A student was classified as visible if she had received any of the above awards. The total number of students thus classified was 109. Correlating the dummy variable--"visible" student--with days absent and then with days late, the coefficient was $-.143$ for absent. The negative coefficient indicates that the more visible students are more likely better attenders. Both non-academic and academic rewards dispensed by the school are important factors in absenteeism,

c. School Involvement (Type 3)

School success measures, in a way, the evaluation the school makes of the individual student. It is related to how involved the student is in the school--highly successful students tend to be highly involved in the school. For our purposes, however, it is useful to consider success and involvement separately, viewing involvement as the student's evaluation of the school and the importance she attaches to activities and events within the school.

We can think of the school as just one source that is competing for the attention and time of its students. The school is competing against outside events, be it a City Fair or a beautiful fall day.

In this competition, the drawing power of the school varies from student-to-student and from day-to-day. For example, attendance on a special event day such as Junior Day or Sophomore Day will probably be high, at least for the group of students affected by the activity. The special activities in the school may be classified as events which affect the entire school (e.g., special assemblies), events affecting a particular grade (e.g., Sophomore Day), and the activities affecting some group of students (e.g., volleyball match, meeting of modern dance club or Fortran club). Data on club membership, club meeting dates, and school activities were kept for the semester. Then a vector of the drawing power of the school for each day, for each individual student, was constructed. This vector differs for each student depending upon the activities she participated in at school. For example, if a student were a member of the modern dance club and the National Honor Society which both met on Wednesday, April 25th, and a school wide assembly was held that day, then the value of her vector for that day would be 3.

The construction of this individual activity or drawing power of the school vector is an attempt to more accurately reflect the influence of the school in the attendance of its students. Extra-curricular activities and special events are traditionally viewed as powerful incentives for school attendance. This belief comes from a comparison of cumulative days absent and some measure of school involvement (e.g., number of extra-curricular activities) and a resultant finding of positive correlation between the two.

To determine the power of the activities in drawing students into school, we compared the attendance on each of the 72 days for students involved and not involved in a daily activity. Table 12 summarizes these results (holding constant days of the week and weather factors). Only one third of the students belong to any club at all in the school. In addition, special event days, such as Junior Day or Sophomore Day, may work in a non-obvious way to influence absenteeism. Many students may come to school but do not check in to homeroom nor obtain a late pass. They come to participate in the event and may not attend any classes. School events that involve so much excitement and anticipation may enhance the likelihood of attendance for the event, but perhaps enhance the chance of class cutting.

Table 12
Average Percentage Absent By Activity/No Activity
Controlling for Rain and Day of The Week

	<u>Activity</u>		<u>No Activity</u>	
	Rain	No Rain	Rain	No Rain
Monday & Friday	22.5	23.4	22.6	19.9
Tuesday - Thursday	14.3	13.0	16.1	15.8

Naturally, these results are compounded by interaction with other factors--such as weather, and day of the week. The analysis carried out in the next section will concern itself with those issues.

Relative Importance of Different Factors in Student Absenteeism

The previous sections have discussed the relationship between attendance and different factors under investigation. This section will attempt to locate the relative importance of these different variables in explaining absence from school. Two different analyses will be carried out; the first will use a variety of measures of total absenteeism as the dependent variable; the second will use daily absenteeism as the dependent variable.

Total Absenteeism

Six different measures of total absenteeism will be used:

1. Total days absent: The total number of whole days out of school from January 30-May 18.
2. Total times absent: The number of different times absent in January 30-May 18.
3. Average Length: The average length of absence.
4. Monday Deviation: The average deviation from expected Monday absence.
5. Friday Deviation: The average deviation from expected Friday absence.

6. Total days late to school: The total number of times late for school.

The explanatory variables are grouped into six clusters as explained below:

1. External causes for absence: Variables which attempt to measure outside of school events which influence absence unpredictably.
2. Transportation factors: Travel time, mode of transportation, and the influence of attending school not the closest to home are factors considered in this group.
3. Attitude toward school: The student's view of the particular school, her attitude toward compulsory schooling and participation in extra-curricular activities will be analyzed in this group.
4. School reasons for absence or attendance: Particular reasons cited by the students for not attending (bored, avoiding a test, failing in school) or for attending (teachers, activities, courses, friends) make up this cluster.
5. School rewards: Academic grades, conduct grades and other rewards given by the school to the student are grouped under school rewards.
6. Selection reasons: For those students who selected this school over another school closer to their home, the influence of selection reasons on attendance will be examined.

Our procedure will be to carry out thirty-six different regressions (one for each variable cluster/dependent variable group) and to examine

the magnitude of the explained variation in the dependent variable.¹

In examining the explanatory power of these six groups of variables, we hope to learn in a rough way the relative importance of each group. This is important to find out for the following reasons. If most of the variation in days absent is accounted for by external events, then this would imply certain actions that the school could or could not take to remedy the situation. On the other hand, if school rewards which are more directly under the control of the school are very important, then the school might consider other alternatives.

Table 13 presents the R^2 and associated F statistic for each cluster of variables regressed on six different measures of total absenteeism. The value in parentheses is the F value; the other value given is R^2 . Each row is labelled according to the cluster it pertains to, and the number of variables in that cluster is indicated as well. Although most of the F values are significant at the .01 level, the relatively small value of R^2 for most of the groups indicates that these variables are not of practical significance in influencing total absenteeism. The strong relationship between school rewards (primarily due to grades) and absenteeism is seen again with $R^2 = .3981$. The interdependence between grades and absenteeism can perhaps best be stated by saying that changes in attendance for the better can improve a student's chances for receiving different rewards from the school and that, on the other hand, a change in rewards and their distribution might make school attendance more attractive.

-
1. The variable, days absent, which is the number of times a student was absent in the 72-day period, was transformed to a quasi-continuous variable by the following transformation:

$$X^1 = \ln \frac{(g + .5)}{(n - g + .5)}$$

where $n = 72$, the maximum number of days absent and g = some number between 0-72, the observed number of days absent (Snedecor and Cochran, 1967).

Table 13
Variation Explained in Total Absenteeism

	Days Absent	Days Late	Number Times Absent	Average Length	Monday Dev.	Friday Dev.
External N = 1038 K = 4 variables	.0640 (17.65)	.0187 (4.92)	.0427 (11.52)	.0497 (13.51)	.0033 (.84)	.0081 (2.1)
Travel N = 1038 K = 5 variables	.0135 (2.82)	.0095 (1.98)	.0243 (5.15)	.0029 (.61)	.0143 (2.95)	.0037 (.76)
Attitude N = 1038 K = 3 variables	.0426 (15.32)	.0073 (2.54)	.0498 (18.06)	.0113 (3.92)	.0066 (3.29)	.0153 (5.36)
School Reasons N = 1038 K = 10 variables	.0600 (6.56)	.0240 (2.53)	.0546 (5.93)	.0396 (4.24)	.0084 (.88)	.0175 (1.82)
School Rewards N = 1038 K = 3 variables	.3981 (227.94)	.0755 (28.17)	.1819 (76.44)	.1827 (77.07)	.0072 (2.48)	.0135 (4.72)
Selection Reasons N = 1038 K = 4 variables	.0545 (14.89)	.0092 (2.39)	.0253 (6.71)	.0258 (6.84)	.0051 (1.32)	.0110 (2.87)

Daily Absenteeism

In addition to examining variations in total days absent we wanted to learn what influenced the day-to-day fluctuations in attendance. To accomplish this analysis we constructed a student-by-day tape of 74,016 observations (1038 students X 72 days). Each student-day observation consisted of items which varied from day to day as well as factors which were constant for an individual student throughout the 72-day period. Thus, each student was represented by 72 observations where some of her values varied from observation to observation and others did not. Each observation was comprised of (1) daily rain data during school travel hours, (2) time of the year, (3) maximum - minimum deviation from average monthly temperature, (4) day of the week, (5) school contact regarding attendance of student within the two week period, (6) activity data, i.e., whether this student had none, or one, or more club meetings or assemblies on this school day, (7) daily absence/lateness information for this student for this day. Each observation also included certain variables which remained constant across the 72-day period, such as grades and school attitudes.

A regression was carried out using these 6 independent daily variables against daily absence or lateness. The results of this analysis are presented in Table 14. As discussed earlier, the influence of day of the week is seen here as the most important daily factor in determining absence.

Table 14
Regression Coefficients for Daily Variables Regressed on Daily Absence

Variable	Standardized Beta	t	Significance Level
Day of Week	.0669	18.17	P < .01
Intervention	.0311	8.26	P < .01
Time of year	.0212	5.65	P < .01
Rain	.0195	5.26	P < .01
Activity	-.0102	-2.74	P < .01
Temperature Deviation	.0073	1.98	P < .01

N = 74,016

R² = .0070

Again, we would not expect that day of the week and rain, for example, would be equally important for all groups of attenders. In other words, the extent to which factors, such as travel difficulties and rain are inhibitors of school attendance really depends on the initial predisposition of the student. For students who are not interested in school anyway, any additional difficulties in getting there are sufficient to keep them away. Consequently, we would expect that weather and day of the week, for example, would be relatively more important for these students. To see if this were true, we carried out separate regressions of the daily factors for five different attendance groups. The regression results are presented in Table 15. Although R² is still not of practical significance, the uniform increase of its value across the groups indicates the increasing utility of behaviorally related factors in explaining school absence.

Table 15
Values of R^2 for All Factors Including Daily Ones

Group	R^2	N	Mean
1	.0047	16,400	4.12
2	.0068	15,010	11.25
3	.0114	21,049	21.52
4	.0163	14,003	40.09
5	.1286	3,940	70.08

Conclusions and Recommendations

The previous sections have attempted to locate factors related to student absenteeism. In this section we would like to draw attention to shortcomings of the treatment and suggest ways to remedy them. This section will also suggest some short term measures schools might adopt to improve attendance and discuss some long range changes in the organization of schools which might be beneficial.

Difficulties in Current Study.

The major drawback in this study was our inability to distinguish between types of absences. Clearly at some point classification of absence as legitimate or not becomes a matter of honesty or standard of the individual who reports his absence. Consequently any clear

definition of "absence due to sickness," "absence due to family problems," etc., will be fraught with a certain amount of arbitrariness. However, some way to indicate reasons for absence should be investigated. Using average length of absence or number of one-day absences might serve as indicators of whether the absences are due to illness or other causes, but until the reliability of these measures is shown, their use as such remains questionable. Using frequency of absence, although it minimizes long term absences, is really not too useful in a school situation where students may be absent for several long periods of time.

To learn more about the utility of different measures of absenteeism in school we need to learn more about the actual causes of the absenteeism. A useful way to investigate this would be to follow a small group of students throughout the school year and determine as well as possible the reasons for their absences.

Another difficulty with the current study was the questionable reliability of the school activity data. Students changed activity and club membership, and although we attempted to keep track of these changes, how well we managed this task is uncertain.

Short Term Suggestions

We have shown the extent to which the occurrence of a Monday or Friday influences absenteeism. As it stands now, schools frequently reinforce this pattern of high Monday-Friday absenteeism by not scheduling any activities or special events for these days precisely because so many students are absent. Similarly, many teachers do not assign or expect much work to be done on Monday or Friday.

Rather than work around the problem in this fashion, the school should

attempt to schedule important and relevant activities on these days. For example, Monday special events should be something outstanding enough to help break down the weekend hanging-on influence--similarly, Friday might be arranged to be a more relaxed, winding down type of day. Monday and Fridays might operate on entirely different schedules than Tuesday-Thursday. For example, the Monday schedule might begin at a later time, with a shortened lunch or homeroom period. On Friday students might also have the option to "push up" their schedule so that they could finish school earlier in the day. Monthly bus tickets could be dispensed on a Monday or a Friday. School annuals, rings and the like could be distributed on these days. The general strategy would be to try particular schemes specifically aimed at increasing the relative attractiveness of school on these days.

Another important factor influencing absenteeism was child care and other duties related to parenthood. Many pregnant students transfer to the special school provided by Baltimore City for expectant mothers; many others do not and temporarily drop out of school. Students should be encouraged to stay in school but for those who cannot, special leaves of absence should be possible and easily available so they can come back into school later. Students should be encouraged to find a regular, reliable babysitter and a substitute babysitter in the event the regular one cannot come. More flexible schedules for mothers, similar to work study students, might be considered. Such schedules would permit, for example, the formation of a student babysitting co-operative where students share in the responsibility for caring for their children. Credit for child care courses could also be given.

Finally, the individual schools and the system as a whole should place more emphasis on the importance of regular attendance. Some specific measures are given below.

1. Have the homeroom teacher display more interest in absences. The extent to which students stay out of school because they think no one notices when they come back is not known. But, if the home room teacher could manage to show concern over the absence and interest in return to school, it might prove useful.
2. Make students aware that future employers call the school and obtain attendance data. Then poor attendance many mean they won't be able to be hired. Probably the best way to do this is by some sort of game playing or simulation so that the point is brought home actively.
3. Have former students come to counsel small groups of chronically absent or problem attenders. This might prove effective where teachers, etc., are not.
4. Sponsor attendance contests by home room, giving specific, tangible rewards. Perhaps money is the only reward that would be attractive enough. Other possibilities include special seating in an important assembly, or letting the best home room sing at a special assembly.
5. Establish "buddy" system or equivalent of group of attenders where each is responsible for the others' attendance and for seeing that make-up work is given to students who missed class.
6. At the beginning of the school year have each homeroom teacher review the previous year's attendance record with each student. Many students do not realize how many weeks of school they have missed.

7. Have the homeroom teacher or aide call the home of the student who is absent to discuss the problem. Set aside time in each teacher's daily schedule to make these phone calls.

Long Range Changes

It is questionable whether the above stop-gap measures would be effective over a long period of time. Some of the ideas and recommendations may be effective when tried the first time, but be of no value when the newness wears off. The school would be faced with continually inventing new gimmicks or schemes which would momentarily peak the interest (or fear) of its students so they would come to school. But most of the recommendations are superficial at best and are aimed at treating the "symptom" of absenteeism, not the "disease" of low investment and involvement in school. Some might argue that this point is irrelevant because what we are after is getting students to attend school. But coercive measures which may produce an end result of higher attendance may produce more undesirable attitudes toward school and learning in general. Quite simply what is desired is to make schools an interesting and rewarding enough place that students will want to attend. In this ideal situation there would be no need for attendance contests or threatening letters to parents.

No one is naive enough to believe that our monolithic educational public school system as it now stands could effectively gear itself up for these changes. The basic ingredient for such a change is a responsiveness on the part of the school to the individual differences and tastes of its clients, the students. But the mere size of many schools, increased in the name of efficiency, makes such accommodations problematic. Consider

a typical urban high school of 2700 students -- catering to the personal predilections of each student would result in such enormous paperwork / as to completely overwhelm even the most ardent individualist. Also, the computerized procedures which have been introduced to reduce the clerical burden have in many instances resulted in less flexibility and toleration for individual differences. The computerized techniques mandate that a certain formal procedure be set up and followed, thus bypassing much of the informal decision making which goes on naturally in the school. It also permits administrators a perfect out in dealing with discontented students: ("Go talk to the computer -- it scheduled you for sixth period lunch, not me.") Because the mechanism for changing something officially -- for example, a student's lunch period -- is located outside the control of the school itself (typically the data center) changes are viewed as more complicated and thus administrators are less likely to carry them through.

One could argue that a simple reduction in size of administrative units, although less efficient in resource utilization, might be one of the ways in which schools could better tailor their offerings to their students. Smaller units adequately staffed would hopefully ease some of the administrative burdens and also make school a more personal, less anonymous, place for its students. Some high schools are divided into "houses" or smaller units; their effectiveness in reducing the perceived bigness and anonymity of the school depends probably upon how artificial or real the houses appear. If the school remains as the real operational unit in the students' view, then the house concept is probably not terribly effective.

Some specific ways in which schools could become more responsive to its students are:

- arrange students' schedules so that work and school can harmoniously exist.
- allow students to take a semester's leave of absence without officially dropping out of school.
- allow students to pass a course on the basis of meeting agreed upon requirements or objectives without penalizing them grade-wise for their absence.
- allow students to attend the school they want to. Schools should advertise openly and accurately what their offerings are. Prospective students should have the opportunity to find out specific facts about the school, such as what its graduates do after graduation, how many go to college, and so on.
- attempt to devise a fairer, more objective way to grade students which accounts for initial ability and effort expended. Such a grading scheme could be used as a substitute for or in conjunction with current grading practices. Students who expend very little effort and those who work very hard for their grade should be rewarded differently.
- implement on a larger scale methods that look promising in promoting good attendance. For example, the organization of the classroom into teams competing in a learning game has in preliminary work produced significant changes in attendance behavior (Allen et al, 1973).

The usefulness of these measures can only be determined by their application in several settings and their systematic evaluation.

Ultimately, however, we are faced with the more difficult task of deciding what we hope the schools and their students will achieve. The objectives of education and the rationale guiding the formation of compulsory attendance laws and child labor laws enacted at the beginning of the twentieth century may not be salient today. The position of youth in American society, as well as the society itself, have changed markedly since the enactment of these laws. A corresponding change in the compulsory attendance laws and the basic organization of the school has not followed. An examination of alternatives to our monolithic school systems is in order.

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APPENDIX A

Attendance Monitoring System

I. Overview

The preliminary version of the attendance monitoring system was put into operation Jan. 30, 1973, the first day of the spring semester. This system was operated daily entirely by the students in a data processing class in the school. Except for minor difficulties, the monitoring system ran smoothly and produced the attendance report each day between January 30 - May 18.

The heart of the monitor system is the student attendance file, stored on a disk pack at the school. This file consists of a record for each student giving her name, unique identification code, and daily attendance data. To maintain this file, the student operators instructed the computer via a typewriter console to perform such operations as adding a student, changing her from one homeroom to another, dropping her from the school roll, changing attendance information or name spelling. Since this file maintenance procedure went on daily, the computer attendance file accurately reflected the on-going school enrollment. At an orientation meeting held in mid-January, each homeroom teacher had received a set of data processing cards, one card for each student. This card contained the student's name and her seven digit code. Each morning the various homeroom teachers (31 total) pulled from their deck of cards the cards of absent students, placed them in an envelope (mailer) and sent these to the main office at the end of homeroom period. During the first period, a data processing student removed the cards from the

mailers and placed them in a card box, keeping the cards in grade and homeroom order. Late students who came in after the homeroom period reported to the late officer in charge to obtain a late pass before going to class. At 9:30, these late passes were hand-sorted by the data processing students and the cards for students earlier marked absent were placed in a tardy box. If the homeroom teacher had turned in a card for a late student (i.e., marked her absent), a card was punched for her and put into the tardy box. At around 10:00, or the beginning of second period, the absent and late cards were taken to the computing center upstairs. These cards were read by the computer and the daily absentee report generated. This report listed the students alphabetically within grade and homeroom, indicated whether they were absent or late that day, and gave the cumulative number of days absent and late for the semester. The disk attendance file was updated at the same time. The percentage absent and tardy for the entire school was also printed. This report was printed directly onto ditto masters which were then run off and distributed to all the individual teachers, main office staff, and aides. The cards of the absent students turned in by the homeroom teachers were put back in the mailers and placed in the teachers' mail boxes.

Several immediate advantages of the monitor system were apparent. First, because it could be run early during the day, teachers could see which students were cutting their classes. Second, by printing the cumulative days absent and late, the counselors and persons concerned with attendance could see daily what students were becoming attendance problems or were having a relapse into a previous attendance problem pattern.

After the attendance monitor system had been in operation for ten weeks, we asked the teachers and staff to evaluate it. The teachers and staff were divided about equally in their favorable comparison of the new attendance system with the previous hand method. Some teachers said the computer printed form was more difficult to read because the printing was all capital letters. Others did not like the double column printing of names saying it was difficult to locate a particular student's name. The double column spacing was used to conserve paper, since on an average day the list ran to three or four pages.

Concerning the accuracy of the new list, teachers said it was less accurate because students who were dismissed early for the day or who came in late (after 10:00 a.m.) were not on the list. There is no way to meet these objections and at the same time provide the list early in the day.

Considering these opinions of the teachers regarding the system, two changes should be made in the system for future use. One, the list should be organized so that all the names for a homeroom appear together. Secondly, because there is no way to have an absolutely accurate list unless it is run at the close of the school day and because the procedure for handling tardy students was cumbersome at best, it is recommended that only absences be run and printed. This absence list could then be available by the middle of the first period and could still help check for class cutters, one of the primary reasons for obtaining the list during the school day.

The teachers and staff were also asked if they used the data on

cumulative absences and lateness from the lists. Over half of them said they used the information and then in an open-ended question gave these uses-- (in order most frequently cited)

- complete various records
- counseling students
- input in deciding what grade to give
- report to parents and for student conferences,

Other uses given by one or two teachers were to check class cutting, to determine what classwork a student had missed and to pinpoint cases of extreme absenteeism.

2. Program Documentation

There are 5 programs involved in running the attendance monitoring system. Brief descriptions of the programs are given below.

- a. ATINL - program to initialize and create initial attendance file.
- b. LSTFL - program to list contents of attendance file, by homeroom or by specific student number.
- c. ABPST - program to post absences to file.
- d. ATRUN - program to post tardies to file and to list daily absence/tardy list.
- e. MAINT - program to delete, or add students or to alter attendance file.

Student Questionnaire

- Never Seldom Often Always

APPENDIX B (continued)

10. What things about this school make you want to attend? Check whether each reason is very important, important, or not important for you. (Check one line for each statement.)

	Very Important	Important	Not Important
The courses I'm taking	_____	_____	_____
My friends	_____	_____	_____
Some teachers here	_____	_____	_____
School activities	_____	_____	_____
Services (including free lunch or free transportation)	_____	_____	_____
My parents expect me to	_____	_____	_____

11. Check each club/activity group that you belong to at Eastern High School.

- | | | |
|-----------------------------|-----------------------------|-------------------------------------|
| 1. _____ Student Government | 11. _____ NAACP | 20. _____ RAHS (Math Club) |
| 2. _____ Class Officers | 12. _____ PEP | 21. _____ Music Club |
| 3. _____ Arts and Crafts | 13. _____ Pre-College Coeds | 22. _____ Fortran Club |
| 4. _____ Black Culture Club | 14. _____ Quill & Scroll | 23. _____ Art Service |
| 5. _____ Career Cadets | 15. _____ Guitar Club | 24. _____ Lost & Found |
| 6. _____ Entre Nous | 16. _____ Computer Club | 25. _____ Projection (Audio-Visual) |
| 7. _____ Hygiene Club | 17. _____ Foreign Language | 26. _____ School Store |
| 8. _____ Jr. Achievement | 18. _____ Griffin Club | 27. _____ Student Council |
| 9. _____ Library Club | 19. _____ Sewing Club | 28. _____ Ecology Club |
| 10. _____ Needlework | | 29. _____ Other _____ |

THANK YOU

APPENDIX C

Questions Asked in Personal Interviews With Students

1. What grade are you in?
2. About how many days have you been absent this semester?
last semester?
3. Why were you absent?
4. About how much of this absence was due to each of the reasons listed?
5. Do you think class cutting is a problem here?
6. Why did you come to this school?
7. What do you like most about the school? least about the school?

APPENDIX D
Teacher Questionnaire

A new attendance system was started at the beginning of the second semester. We are interested in your opinions regarding it.

Please check your position:

Teacher _____ Secretary _____ Aide _____ Other _____

1. Do you think the new daily attendance lists are...

_____ easier to read than the old ones
_____ more difficult to read than the old ones
_____ about the same to read as the old ones

2. Do you think the new absentee/tardy lists are...

_____ more accurate than the old ones
_____ less accurate than the old ones
_____ about as accurate as the old ones

3. Do you use the information on cumulative absences and lateness?

_____ Yes
_____ No

If yes, how?

4. What do you think can be done to improve attendance at this school?

5. About how often do you discuss attendance problems of any of your students with the main office?

_____ A couple of times a year.
_____ A couple of times a semester.
_____ A couple of times a month.
_____ A couple of times a week.
_____ Several times a week.

6. Think of the students in this school. For each statement, check how often you think it is their reason for absence from school.

	Seldom	Sometimes	Often
Illness	_____	_____	_____
Home problems	_____	_____	_____
Caring for someone else at home	_____	_____	_____
Bad weather	_____	_____	_____
Just didn't want to come to school	_____	_____	_____
To avoid taking a test at school	_____	_____	_____
Going somewhere with friends	_____	_____	_____
Other (Write in) _____	_____	_____	_____

THANK YOU

APPENDIX E

Sample letters to parents

HIGH SCHOOL
STREET
BALTIMORE MARYLAND

APRIL 19, 1973

DEAR PARENT OF --

DURING THE CURRENT SEMESTER, STAFF MEMBERS AT HIGH SCHOOL AND THE EDUCATION CENTER AT JOHNS HOPKINS UNIVERSITY HAVE BEEN WORKING TOGETHER TO TRY TO IMPROVE THE ATTENDANCE OF STUDENTS AT HIGH SCHOOL. WE WANT TO CALL YOUR ATTENTION TO THE EXCELLENT ATTENDANCE RECORD OF YOUR DAUGHTER. DURING THE FIRST PART OF THE SEMESTER (UP UNTIL THE SPRING VACATION), YOUR DAUGHTER WAS ABSENT 0 DAYS AND WAS LATE FOR CLASS 0 DAYS.

CONTINUATION OF YOUR DAUGHTER-S EXCELLENT ATTENDANCE WILL ASSURE HER OF THE BEST OPPORTUNITY FOR SUCCESS IN SCHOOL.

SINCERELY,

PRINCIPAL

SCHOOL
STREET
BALTIMORE MARYLAND

APRIL 19, 1973

DEAR PARENT OF --

DURING THE CURRENT SEMESTER, STAFF MEMBERS AT
SCHOOL AND THE EDUCATION CENTER AT JOHNS HOPKINS UNIVERSITY, HAVE
BEEN WORKING TOGETHER TO TRY TO IMPROVE THE ATTENDANCE OF
STUDENTS AT SCHOOL. WE WANT TO CALL YOUR ATTENTION
TO THE GOOD ATTENDANCE RECORD OF YOUR DAUGHTER. DURING THE
FIRST PART OF THE SEMESTER (UP UNTIL THE SPRING VACATION), YOUR
DAUGHTER WAS ABSENT 3 DAYS AND WAS LATE FOR CLASS 0 DAYS.

CONTINUATION OF YOUR DAUGHTER-S GOOD ATTENDANCE WILL ASSURE
HER OF THE BEST OPPORTUNITY FOR SUCCESS IN SCHOOL.

SINCERELY,

PRINCIPAL

SCHOOL
STREET
BALTIMORE MARYLAND

APRIL 19, 1973

DEAR PARENT OF --

DURING THE CURRENT SEMESTER, STAFF MEMBERS AT SCHOOL AND THE EDUCATION CENTER AT JOHNS HOPKINS UNIVERSITY HAVE BEEN WORKING TOGETHER TO TRY TO IMPROVE THE ATTENDANCE OF STUDENTS AT SCHOOL. AGAIN, WE WANT TO CALL YOUR ATTENTION TO THE ATTENDANCE RECORD OF YOUR DAUGHTER. DURING THE FIRST PART OF THE SEMESTER (UP UNTIL THE SPRING VACATION), YOUR DAUGHTER WAS ABSENT 9 DAYS AND WAS LATE FOR CLASS 1 DAYS.

IMPROVEMENT IN YOUR DAUGHTER-S ATTENDANCE WILL ASSURE HER OF THE BEST OPPORTUNITY FOR SUCCESS IN SCHOOL.

SINCERELY,

PRINCIPAL

SCHOOL
STREET
BALTIMORE MARYLAND

APRIL 19, 1973

DEAR PARENT OF --

DURING THE CURRENT SEMESTER, STAFF MEMBERS AT
SCHOOL AND THE EDUCATION CENTER AT JOHNS HOPKINS UNIVERSITY HAVE
BEEN WORKING TOGETHER TO TRY TO IMPROVE THE ATTENDANCE OF
STUDENTS AT SCHOOL. AGAIN, WE WANT TO CALL YOUR
ATTENTION TO THE ATTENDANCE RECORD OF YOUR DAUGHTER. DURING THE
FIRST PART OF THE SEMESTER (UP UNTIL THE SPRING VACATION), YOUR
DAUGHTER WAS ABSENT 21 DAYS AND WAS LATE FOR CLASS 9 DAYS.

BETTER ATTENDANCE IS NECESSARY TO ASSURE YOUR DAUGHTER THE
BEST OPPORTUNITY FOR SUCCESS IN SCHOOL.

SINCERELY,

PRINCIPAL

SCHOOL
STREET
BALTIMORE MARYLAND

APRIL 19, 1973

DEAR PARENT OF --

DURING THE CURRENT SEMESTER, STAFF MEMBERS AT SCHOOL AND THE EDUCATION CENTER AT JOHNS HOPKINS UNIVERSITY HAVE BEEN WORKING TOGETHER TO TRY TO IMPROVE THE ATTENDANCE OF STUDENTS AT SCHOOL. AGAIN, WE WANT TO CALL YOUR ATTENTION TO THE ATTENDANCE RECORD OF YOUR DAUGHTER. DURING THE FIRST PART OF THE SEMESTER (UP UNTIL THE SPRING VACATION), YOUR DAUGHTER WAS ABSENT 49 DAYS AND WAS LATE FOR CLASS 0 DAYS.

AN IMMEDIATE CHANGE IN YOUR DAUGHTER-S ATTENDANCE IS NEEDED TO ASSURE HER OF THE BEST OPPORTUNITY FOR SUCCESS IN SCHOOL.

SINCERELY,

PRINCIPAL